TWO BIRD-LOVERS IN MEXICO

C. WILLIAM BEEBE

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(Page 199)

MEXICAN MOTMOT. THE PENDULUM ON THE SWING

TWO BIRD-LOVERS IN MEXICO

BY

C. WILLIAM BEEBE

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ILLUSTRATED WITH PHOTOGRAPHS
FROM LIFE TAKEN BY THE AUTHOR

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TO MY WIFE

THE OTHER BIRD-LOVER

WHOSE SYMPATHY AND HELP IN THE FIELD
AND IN THE STUDY HAVE MADE
THIS BOOK POSSIBLE

PREFACE

THESE chapters on the Nature life of Mexico were written during a trip to that country in the winter of 1903–04. We reached Vera Cruz on Christmas Day; Guadalajara on New Year's, from which city we made three camping trips in the vicinity of the Volcano of Colima, in the States of Jalisco and Colima; and returning via Vera Cruz, we left that port en route for New York at Easter.

The entire trip was so novel, so delightful, so absolutely devoid of unpleasant features, and on the whole so inexpensive, that it seemed to me that the knowledge of such an outing would tempt many lovers of Nature to this neighbouring Republic. As an aid to such Mrs. Beebe has added a chapter on "How we did it."

Our sincere thanks are due to Hon. Levi P. Morton, Mr. Madison Grant, and Secretary of State John Hay, for letters of introduction which proved invaluable. Of the innumerable courtesies extended to us in Mexico we are especially grateful for the kindness of Gobernador Miguel Ahumada, of the State of Jalisco; to Gobernador Enrique O. de la Madrid, of the State

of Colima; to the Rev. A. C. Wright and many other friends in the city of Guadalajara; and also for the extreme kindness of Mr. W. D. Murdock and other officials of the Mexican Central Railroad, to whose unfailing courtesy much of the pleasure and the profit of our trip are due. Our sincere thanks are due to General Canada, the American Consul at Vera Cruz, for courtesies extended to us during our enforced stay in that city.

Mr. C. B. Waite of Mexico City has kindly permitted the use of his copyrighted photographs for the frontispiece and on pages 15, 23, 29, 30, 97, 333, 343, 358, and Mr. R. H. Beebe the use of that on page 71. The illustrations on pages 27, 33, 83, 108, 111, and 125 are the work of Mr. Scott. The other illustrations are photographs of living subjects taken by myself.

Parts of certain chapters have already appeared in print in the New York "Evening Post."

To facilitate reference to the birds observed and to the mammals which we were able to identify on our trip, I have added as an Appendix an annotated list, with reference to pages of the book, thus supplementing the Index. In the preparation of this Appendix I am greatly indebted to Mr. E. W. Nelson, of the Biological Survey at Washington, for the identification of specimens.

C. WILLIAM BEEBE.

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TWO BIRD-LOVERS IN MEXICO

CHAPTER I

WAVES OF THE SEA

IT was the evening of the seventeenth of December when our steamer passed Liberty Statue. A sleety storm drove us into our cabin, where we delved for the hundredth time into our much-thumbed bird-books, striving to make real to our imagination the birds we hoped to see, and to attune our ears to the sibilant tones of the Spanish tongue — the language of the country whither we were bound — Mexico, the land of the Cactus and the Caracara.

There is one joy of reading, another of painting, and another of writing, but none to compare with the thrill which comes to one who, loving Nature in all her moods, is about to start on a voyage of discovery to a land familiar to him in dreams alone.

Before we had passed the restless waves off Hatteras we became familiar with the flocks of Herring Gulls, as they gleaned the refuse from the wake of the ship.

GANNET. A CAPTIVE WILD BIRD

The Stormy Petrels, the Ring-billed Gulls and the Gannets delighted us, and Black-fish and Dolphins played about us day after day.

Farther to the south we disturbed immense flocks of Phalaropes — little sandpipers of the sea — spending the winter far from land. Occasionally the steamer's prow bore down upon a solitary Loon, forcing it to dive, and in the blackness of night these brave birds

called to us, their wild laughter ringing out above the whistle of the wind through the rigging.

When at last we left behind the zone of winter, the breeze came softened by the balminess which a northern sojourner never knows.

Vessels built by human hands had been few and far between, but now we passed a real ship of the sea,

LIVING PORTUGUESE MAN-O'-WAR, BEACHED

a tiny galleon of crystal, which floated by, drifting before the wind, silent as the Flying Dutchman.

We were the only ones who hailed it — perhaps the only ones who could call its name — a Portuguese

Man-o'-War. Its tiny bladder-sail was buoyant and full-stretched, reflecting all the hues of the rainbow, and the curling tentacles trailed after. At sight of it a thousand memories of palm-studded shores rushed over us, and, looking up, we realized that the miles had slipped past more quickly than we thought, for only a short distance away was the white beach of mid-Florida. It was there — we can discern almost the very spot — that last winter we watched so many hundreds of fleets of these selfsame Men-o'-War come to grief, wrecks innumerable, but exquisite even in their death.

We now edged inshore still closer. The glass showed every familiar feature; the feathery cabbage-palms, tall and graceful; the dense, stiff palmettoes; now and then a little cloud of Sanderlings blowing seaward and back again; and, finally, a long dark undulating line, now throbbing with action, now moving smoothly, and we knew that the Brown Pelicans were on the way to their fishing-grounds. A flock of Bluebills passed swiftly, and high over the land hung the Vultures, forever waiting and watching. Once, with the glass, we made out a mass of circling, soaring birds. This is the aerial guard of Pelicans watching over their islet in Indian River, where last year we saw hundreds of nests, eggs, and young birds, all crowded closely together on a low island of some three acres' extent. Through an inlet we caught a

glimpse of some Wood Ibises, and then began the uninteresting array of cottages and hotels from Palm Beach southward.

Before dark we were passing the Keys, — those magical islands where we had revelled among the

CABBAGE-PALMS AND PALMETTOES ALONG THE FLORIDA COAST

angel fish, the corals, and the sponges. A solitary Frigate-bird sailed majestically past in the van of a short, hard downpour of warm rain. In a few minutes all was clear again and a beautiful sunset stained the water crimson and silhouetted the channel buoys,

throwing into black relief the Florida Cormorants and Frigate-birds which make these buoys their roost. Alligator Light at last with measured winks gleamed at us from out the darkness, and the warm tropical night wind made of snow and winter but a fading memory.

Early in April, when we returned through these waters, we encountered a terrific storm of wind and rain when about one hundred miles east of Jacksonville. Just before the first squall reached us, a male Hooded Warbler in full plumage dashed to the steamer's rail, balanced a moment, and hid in one of the life-boats. Five seconds more and the raging wind would have hurled the little creature into the waves.

Our first view of Cuba was not an especially romantic one, all that was distinguishable in the early morning dusk being the brightly lighted trolley cars moving swiftly along the shore. Later, when we approached the land and the sun rose, we came under the spell of the full beauty of Havana's harbour. Morro and Punta passed grey and sombre, the white spray of the sea thrown high at their base. Then appeared the white, glistening city, crowding close to the water's edge, its landward boundary lost in a setting of emerald hills. We dropped anchor near the bewreathed fighting-tops of the historical Maine, and hastened on shore in a rolypoly "bum-boat."

After wandering about the city for a while and seeing the proverbial *patios*, *señoritas*, *mantillas*, and *plazas*, which for most travellers are the sum total of interest, we took a trolley out into the suburbs, beyond the whitewashed walls and blue blinds, to get a flying

PELICANS

glimpse of Cuban nature. No feathered creatures, save the ubiquitous Turkey Vultures, appeared until fortune guided us to the *Botanico Jardin de Universidad*, where among the roses and jasmines, the wide-spreading rubber-trees, and stately Royal Palms, we found birds in abundance. Our minds recorded the

English Sparrows subconsciously, as from habit we forgot to give this intruder a place on our list until we left the Garden. A small flock of Anis (*Crotophaga ani*) — those slender cow-birds of the tropics — kept to the tree-tops. In appearance they were like emaciated Grackles with high-arched bills. The Yellow Palm and Myrtle Warblers were abundant, while Cat-

ROYAL PALMS, HAVANA. BOTANICO JARDIN DE UNIVERSIDAD

birds, Mockingbirds, and Redwings were in lesser numbers. Ground Doves scurried about, and a single American Pipit walked ahead of us along the gravelly paths. Several vireos and other small birds passed too quickly for identification. Two Orioles, with the black throats of their second year's plumage, were dusted thickly with yellow pollen, making them of a beautiful golden green colour. These birds were remarkably tame and allowed us to come within four or five feet of them. Skinks and other small lizards were everywhere, and the brush-piles rustled with their scurrying. Twice in succession I saw a small green lizard attacked and driven out of sight by a large violet-winged ichneumon fly.

Forced to be satisfied with these meagre notes of Cuban life, we hastily returned to the steamer and soon afterward weighed anchor. Half an hour before we left the harbour, tiny bats began to fly swiftly past us, with a remarkable, unbat-like directness of flight. Within twenty minutes, hundreds passed by, — coming, perhaps, from some desolate coral cave along the coast and heading straight inland. Throughout our first night on the Gulf, and all the next day, rolled by a heavy ground-swell, our vessel steamed due west.

Although birds were unaccountably absent during this portion of our trip, their place was taken by winged creatures of the sea — our first Flying-Fish.

And how curious they are; descriptions and drawings being powerless to give any adequate conception of them in life!

Probably the astonishment which one feels at beholding a fish desert its element, to which it seems so helplessly bound, and skim lightly as a bird, yard after yard through the air, is no less in a well-read student of fishes than in a person who has never heard of such a phenomenon. From the bow we watched the tiny grey forms, which shot ahead just below the surface, suddenly emerge, the four great fins instantly spreading taut. The smaller posterior pair fold up and close occasionally, but the pectoral ones remain expanded. A fresh impetus is sometimes gained by a second's touch of the tail to the crest of a wave, a frantic wiggle sending the little creature up and on again. But soon strength and momentum give out and the flight ends in an unlovely flop into the water. Some of the Flying-Fish seem but half an inch in length, — from our lookout they are hardly larger than blue-bottle flies, — while the largest may be six or seven inches from head to tail. Similes between marine and terrestrial creatures are often inapt and ill-taken, but no one can deny the resemblance between these fish and the large flying grasshoppers of our summer meadows.

The most exciting event of the day proved to be the discovery of several waterspouts — great Atlas-like

pillars of ever-moving liquid, joining sea and cloud. The steamer passed through a small one and dissolved it, a sudden torrent of rain representing the synthesis of the watery column.

Early next morning the engines ceased their throbbing and we swung round from our anchor in the light emerald waters, five miles off shore at Progreso, Yucatan. A trip ashore showed a most barren country, sand and dusty mesquite with several scattered palms in the far distance; no birds, no insects, no flowers. Only the sisal hemp exporter could be interested in the scorching warehouses, and even he seems to yearn to leave the country in company with his fibre. Cows must be a long-felt want in Yucatan, judging from the number which were sent ashore, each mutely patient bovine unresistingly allowing herself to be belted in a canvas sling and hoisted up and outward to the unsteady deck of a lighter. Last of all came several netfuls of new-born calves, their legs dangling helplessly through the meshes, protesting with shrill, infantile bleats at this enforced aerial journey.

We heard fascinating tales of primeval forests far in the interior, and ruins of cities built by a diminutive race of savages, but our faces were turned toward the setting sun and nothing tempted us aside.

Much of interest was to be seen about the ship. The floating garbage attracted thousands of lithe, silvery Needle Fish, looking like tiny editions of Gar-

pikes. These glided past in schools or fought in swarms over bits of meat and bread. Sharks now and then cut the water with their long fins and might be tempted with pork. Red Snappers and Grunts, the latter with beautiful blue and gold-lined heads, were abundant, and over the stern rail one could soon catch enough for dinner.

Many hours after the low coast of Yucatan had sunk below the horizon, two coral islets appeared, — two desolate crescents of sand bravely defying the great waste of waters. Yet they do not deserve the term desolate, for several hundred sturdy feathered beings know these little plots of dry land as home. Booby is the meaningless name by which these birds are known to man, but little care they ; a world of ocean with fish in plenty, a mate, a few square inches of dry sand, and they are happy and content. The steamers which pass now and then might cease to come, mankind and his civilization might vanish from the earth, and the Boobies would miss nothing. They are blood brothers to the Gannets, but are feathered brown above instead of white, and enjoy each other's company more, flying in long oblique lines close to the water. Now and then one dropped from the flock like a plummet, seized a fish, swallowed it, and rising, caught up with his companions, all of whom were moving steadily onward, paying not the slightest attention to the steamer.

The sun sank into a sea smooth as glass, and when its golden path had faded out, a tiny thread of silver was left, — the thin moon-crescent hung even-balanced in the western sky, — and our last night on the water — our first Christmas Eve in the tropics — was one of enchantment.

LIVE NEEDLE FISH

CHAPTER II

COAST AND TABLELAND

WITH all our alertness and despite much peering through glasses on Christmas morning to catch the first glimpse of the low Mexican coast, we found ourselves most profoundly deceived and tricked by Mother Nature. No horizon was ever more closely scanned than was that in the path of our steamer, but when a dark and ominous-looking cloud slowly rose ahead, we were fain to give up the attempt, supposing that the approaching storm concealed everything beneath it. Idly watching the dark clouds as they gained in size and distinctness, the truth suddenly flashed upon me, and if ever my eyes beheld a miracle it was in the fraction of a second in which the rising banks of storm clouds changed to a grand range of lofty mountains, apparently rising abruptly out of the sea. But the end of the miracle was not yet. Surely those fleecy white thunder-caps which edged the apex of the supposed storm and so enhanced the resemblance — these at least must be what they seemed. I strained and strained through the glasses, and, satisfied on this point, was about to lower them, when the scales again were lifted from my eyes, and the magnificent peak of Orizaba,

forever capped with snow, stood out against the sky like purest crystal. So clear-cut was it that it seemed but an hour or two away in the very path of the steamer. We had expected many pleasures in Mexico, but never such an introduction — as sublime as it was unexpected.

Waite, photographer

PEAK OF ORIZABA

As if to punish us for our extravagant delight, mists and haze soon closed like a curtain over all, to keep the coveted sight from our eyes for days to follow. An hour or two later, we approached the harbour of Vera Cruz, in the teeth of a rising storm, only too real this time. We anchored behind the protecting breakwater and went ashore in a small and shaky boat, which, soon after our landing, was swamped at her moorings. Within three minutes after reaching shore the wind increased to a hurricane, cutting off all communication with the steamer and our baggage. On the strength of the comforting (?) information that it was an unusually severe "norther" and would last two or three days, in company with our stranded fellow passengers, we sadly sought accommodations in this most overcrowded and unsavoury of Mexican cities.

To many of our party, the most enduring memory of these first two dreary days will ever be the stinging storm of flying sand which filled the air; others will never forget the Vultures which walk about the streets and peer hungrily at the passers-by; I am sure that all will be able to recall the flavour of the paregoric pudding (or should I call it *sopa de anise-seed?*) which was the *pièce de resistance* of our Christmas dinner. But our memories are not altogether unpleasant ones. Our pockets were delightfully heavy with great silver dollars and other denominations of Mexican money which we had received for our American gold. Some

of this it must be admitted was as soiled in a literal sense as it is described in the proverbial filthy lucre. But then did we not have more than double our original amount? And there are few of us who would not

STREET SCENE IN VERA CRUZ

rather have $2.18 (which was at that time the rate of exchange) than a single dollar, even though it be fresh from the mint!

Catching a glimpse from the roof of our hotel of the wonderful surf thrown up at the breakwater to the northward, we made up our minds to see this rainless terrible "norther" and its work, face to face. We

found walking little short of torture until we got to windward of the sand dunes outside of the city, where the air was clear, although the wind was so strong that one had to creep on hands and knees. Crouching in the lee of the great breakwater, we watched the tremendous waves roll in; vast walls of green and white, which curved and broke twenty feet above the line of ponderous masonry. Vessels would be shattered like glass if they were near shore on the outside, and even in the protected harbour all their anchors were needed. When the waves reached the foot of the breakwater the spray was hurled sixty feet or more into the air, and the sound was like heavy thunder. Now and then huge, handsomely mottled crabs were hurled, frantically kicking, through the air, over the breakwater, and good-sized fish were twice dashed toward us.

Other craft than the vessels were riding out the gale near us — a trio of Brown Pelicans, facing up wind, rising and falling on the waves inside the line of fury. They floated upwards a few feet above the water, as we approached, but the strength of the wind beat them down again. The line of froth of the highest-reaching wave on the beach was darkened with the bodies of thousands of insects, victims of the storm — tiger beetles and small moths predominating. Behind tiny clumps of grass along the beach, hard-pressed birds had sought safety, and, when forced out of their shelters, half ran, half fluttered to the next bit of weeds.

Two Wilson Snipe, four Killdeer Plovers, and several small Wilson Petrels were among this gale-stricken assemblage.

The strangeness of the Mexicans, and their dress, their houses, streets, and markets were of never-failing

ONE OF THE BLACK SCAVENGERS

interest; but well-written accounts of these may be found in half a hundred volumes. Many of the customs and much of the city life of these people seem half familiar after one has perused such books. It is the outskirts of the towns and beyond that promise the real surprises.

We welcomed the first movement of the train which

was to bear us to the town of Orizaba; and as we whirled along, we were "just one large eye." For the first few miles, sand, sand everywhere, and as we approached the edge of this coastal desert, the ravages of the "norther" became plainly visible. Far to the north of us, midwinter blizzards were raging; snow was drifting and filling every hollow. Here, although nothing had fallen from the sky, a more deadly blizzard had swept over the land. In some places the sand seemed to have been lifted bodily in great masses by the gale, and carried inland. Fenced-in gardens of vegetables and flowers were a foot deep in level sand, while the sombreroed Mexicans were working frantically with fingers and baskets to remove the deadly weight of stony grains. More than one thatched hut was crushed in to windward by the weight of drifted sand, and many of the banana palms were buried so deep that their low-arching leaves were all held fast. We saw where the natives had erected a stout barrier to protect a little cultivated patch, but this proved merely a challenge which the north wind accepted with fierce joy. It was short work to fill in the windward side with the shifting dust, and then each blast sent a cloud, swirling up the slope to fall over the top like a waterfall — a merciless stream of blighting sand.

The train soon left behind this unpleasant zone of Nature's warfare, and we passed into dense jungles as

tropical as any under the equator. As any zonal map will show, while the North Temperate reaches a chilly finger far southward along the highest slopes of Mexico's tableland, the Tropics are not intimidated, but threaten indeed to outflank their eternal enemy by sending long slender arms northward up the two coasts, where the breath of the equator defies the frosts of the snow-capped peaks but a few miles away. For mile after mile we rushed on, hardly rising a foot, through fields of tasselled *cano azucar* (sugar-cane), through groves of banana and cocoanut-palms, and coffee plantations. Marsh and Sparrow Hawks were abundant, and an occasional large yellow flycatcher flashed past. We began to draw near the mountains, which rose high and grand in a single abrupt sweep from the flat hot lands, the *tierra caliente*, which we had left behind us.

At night, in our hotel in Orizaba, we were reminded of our close approach to the cold mountains by a freezing wind which lasted until late next morning. Amid hundreds of roses we shivered and shook as we ate our breakfast in the open *patio*. The insect life of this town must go into a semi-hibernation every night, for I found many species of moths and beetles stiff and numb upon the ground beneath the electric lights. Two large and beautiful sphinx moths (*Pseudosphinx tetrio*) which I held in my hand for some time, revived, and at last were able to fly weakly away.

Waiting at the station for the early morning train, we saw nothing but lofty mountains on all sides. At the first rays of the sun, the cold night mists drifted away, or, glacier-like, streamed slowly into the deeper valleys, leaving each depression and hollow of the mountain forest overflowing with an intercepted cloud-pool, which in the increasing warmth soon sank into the foliage or was drawn upward into invisibility.

Orizaba's cap of snow, which forever hangs above this little town, — its namesake, — was not visible in the early morning, owing to the mists which filled the upper air. The mountain directly facing the station was not a large one and was near at hand, and when the dense clouds suddenly cleared away, we were astonished to see its blunt summit capped with a dazzling mass of snow. Every detail stood out clear-cut; it seemed as if we might almost walk to the summit, throw a snow-ball into the streets of the town, and return in time for the train. But the mystery of this small, low mountain, thus snow-covered, was not solved until we walked a few hundred yards to one side and, to our amazement, the cap of snow had slid a little off the mountain! The explanation was then clear. Orizaba, although over forty miles away, was directly in a line with the small mountain near the station, and at that place the snow-cap fitted so exactly upon the lesser mass that closest scrutiny with the glass failed to show the deception, while the clearness of the atmosphere mocked

Waite, photographer

ORIZABA MOUNTAIN THROUGH THE CLOUDS

every estimate of distance. Thus Orizaba scored a second time upon us, putting to naught the evidence of our senses.

The town of Orizaba is said to be very healthy, although here, as in Vera Cruz, the sanitary arrangements are most primitive, and with the sun come the ebony hosts of the feathered board of health — scavengers in the shape of Black Vultures and Blackbirds.

The ride of the first few hours beyond Orizaba is one of the most wonderful experiences in Mexico, if not indeed in the world, and both words and pictures fail utterly to describe it. The train is drawn by a great double engine, and the grade is remarkably steep. Round and round we slowly wound, in and out of the valleys and mountain clefts, ever higher and higher.

First we passed along the bottom of a wide valley; then, leaving it behind, we pierced tunnel after tunnel, five, ten, fifteen, and more, each separated by a beautiful vista of the valley below, growing ever more distant. Near the centre of the valley, a tall solitary poplar at the edge of a little pond is a prominent landmark, which comes again and again into view from different points of the compass. The engines puff laboriously up to a station set deep in the woods, and dark-faced Indian women cluster at the windows holding up gourds of orchid plants or oranges or *enchaladas*. "*Comprar las naranjas? Favor de comprar las flores?*" they beseech for an interval, and the train passes on.

Half an hour later, another wayside station comes into view and the identical women crowd up as before, with the same baskets and gourds of wares. This shows how laborious and slow was our progress; the Indian women had run through the woods and now again intercepted us, many miles from the last station, as the track lies. The natives often send freight from place to place, helping to load it on the car, then running by some short cut, beating the train, unloading their baggage, and thus saving all car-fare.

At last we were so high that the large cultivated fields looked like squares on a checker-board, and the herds of grazing cattle became tiny black dots. The most wonderful phenomenon of this ascent was the change in vegetation. Oranges and bananas were replaced by plants of the temperate zone, and before the highest point was reached, the vistas of the tropical lowlands were framed in the needle-tracery of cold-loving pines. Three hours' travel on this train will teach one more of physical geography than three months of study. At Esperanza we were more than a mile above the level of the sea, and here the engines were changed, the big fellows to rest a day and to-morrow to slide gently back to Orizaba.

As suddenly as we entered the mountains, so without warning we left them and found ourselves rushing along through clouds of dust across a plain, the beginning of the great Mexican tableland, which extends

Scott, photographer

THE PEAK OF IXTACCIHUATL: THE "SLEEPING WOMAN"

from coast to coast. By far the larger part of this area which is seen from the train may be described as one enormous *pulque* patch, *pulque* being the national intoxicating drink. This is obtained from the *maguey* plant, great century-plant-like growths which are about the only green things that will grow in

Waite, photographer

VIEW FROM ESPERANZA

this saltpetre-permeated earth. The great spike-leaved plants are placed in rows about ten feet apart in each direction, and for mile after mile, league upon league, these rows reach to the horizon. As the train passes, the radiating oblique lines, focusing at one's eye, seem to revolve in a continuous, maddening, reeling whirl.

Waite, photographer

CRATER OF POPOCATEPETL

But Orizaba was still in plain sight to soothe the most tired eyes. Lofty, sublime, chaste, it ever stands, with that wonderful character common to snow-capped peaks, of seeming to hang suspended in the air, with no touch of the earth beneath. The old Aztec pyramids of the Sun and Moon appeared, and were left behind, and finally the white heads of Popocatepetl and Iztaccihuatl came into view. We found that Orizaba had left us few adjectives wherewith to express our admiration of the majestic beauty of these mountains, the "Smoking Mountain" and his mate the "Sleeping Woman;" but we began to realize, what became ever more true to us, that the volcanoes and snow peaks of Mexico are among the greatest pleasures

this country has to give to a lover of God's Nature. The alkali dust rose thicker and penetrated every crevice until we were almost smothered behind our wet handkerchiefs as we rumbled into the station of the City of Mexico.

The capital city is Americanized to such an extent that it lacks the charm of a typical city of either country, and one may find a greater enjoyment and novelty in the more suburban parts, amid the beauty of the Vega Canal, or the stateliness of Chapultepec. Within the grounds of the latter historical place was a pitiful little zoological garden, perhaps the only one in the Republic. Here, in a few small, rickety cages, were some Mexican Deer, Peccaries, dogs, pigeons, and rabbits, a magnificent Harpy Eagle, and a forlorn Lioness.

The cathedral, with its softened, incense-laden air, its quiet, impressive hush, so different from the bustle outside, seemed out of place on this side of the globe, so venerable and mediæval is the effect it produces. This very day was being celebrated as its three hundred and sixtieth anniversary.

Occasionally, during our all-night ride westward from the capital, I peered out of the window of the sleeper into the dim light of the night, but *pulque* plants by moonlight were all that rewarded me. With the coming of dawn the country appeared more diversified, and fields of maize-stubble alternated with the

leagues of *maguey* — enough of the latter, one would think, to provide the whole world with delirium tremens. Birds became much more numerous. Cowbirds, in dense, compact flocks of a thousand or more, rose and whirled away in unison, and almost every good-sized tree had a Shrike perched on the topmost branch. The line of Sparrow Hawks on the telegraph wires was unbroken, about one to every eighth pole. They showed not the slightest fear of the passing train, and left their perch only when some large insect or small bird rose near by. Twice we saw them attack Cowbirds almost as large as themselves, the two falling, fiercely struggling, to the ground. We were told by an engineer who was an accurate observer of birds that occasionally these valiant little hawks were overcome by birds of greater strength than themselves, which they had fearlessly attacked.

The momentary glimpse of some small ponds showed a vast assemblage of ducks and wading birds and made us impatient for our journey's end. We found the Mexicans more and more interesting, and each little station offered something new. Blind musicians, who twanged guitars strung with eighteen strings, and chanted *Paloma* and other odd-timed Mexican or Spanish songs, were led beneath the windows. We were astonished to hear them all join at the end in screaming the melody of "After the Ball is Over," and we wondered how that time-worn tune could have

CAVE DWELLERS

reached thus far. We were at fault in this, however, for these people have more right to the air than we. The plagiarism lies with us, for the air is an old, old Spanish one, and the musical words which the Mexicans use antedate by many years our frivolous verses.

An old man approached and began to imitate familiar sounds; a dog's bark, a cock's crow, a bird's trilling, were excellently rendered, and *cinco centavos* made him happy. At each small station the throng was a strange, most picturesque one. Once a young Mexican of twenty or thereabouts climbed on board and walked down the aisle of the car, looking curiously at everything, but never ceasing to knit a gaudy, red sweater-like affair. This feminine occupation was thrown into stronger relief by his large-calibred revolver and embroidered belt of cartridges.

The Mexicans ingeniously utilize the large crotches of trees as receptacles for stacks of fodder, and a tree thus filled to overflowing with corn-stalks is a curious sight. The fodder is, by this means, kept out of the reach of hungry cattle and burros.

A station often shows nothing but a rickety, shed-like building, the town being at a distance and out of sight. In some cases the natives have reverted to cave-dwellings, hewn into the rocky cliffs, the entrances to which remind one of a colony of Bank Swallows on a gigantic scale.

All these, and a hundred other impressions, held our interest before we backed down into our last stopping-place, the *Estacion de Guadalajara*. They left us with a confused but realistic appreciation of the strangeness and isolation of this sister republic of ours, whose land adjoins us, and yet whose ways and customs are separated from ours by centuries of time and a vast degree of culture.

MUSICIANS

CHAPTER III

WALKS IN THE CACTUS COUNTRY

EARLY on New Year's Day we were awakened by the song of birds — not the morning carols of those we were so eager to see and hear, but an almost continuous series of clarion tones from hundreds of roosters. Far and near they flapped and crowed and crowed again, and our *patio* rang with the sound. Before the last few lingering crows died away, dozens of church bells began to toll, some sonorous and slow and others with frantic clangs. Succeeding these, more or less expert buglers chimed in, scores from the various barracks blowing loudly if not well. Apparently the *reveille* was the object of most of their efforts, certain individuals sounding *taps*, which made up in vigour of blast what was lacking in appropriateness.

Our Guadalajara home was well on the outskirts of the city, in easy walking distance of the *transvia*, which, behind three galloping mules, shrieked along the uneven rails and afforded rapid transit to the *plaza*.

Several minutes' walk in the opposite direction, and the narrow street frayed out into a few straggling, thatched huts, beyond which stretched the level sun-

burnt plain which separated the city from the surrounding hills.

The air in early morning was as keen and fresh as that which blows across a Nova Scotia upland, and we forgot that we were well south of the Tropic of Cancer. The pumice which crackled underfoot showed why the poor grass and weeds shrivel at the first lack of moisture at the beginning of this rainless season. There was nothing in the level country extending before us mile upon mile, to suggest that we were at an altitude above the clouds of distant New York — a mile above the sea. We almost expected to see the Mexican clouds appear close overhead, perhaps just clearing the fields as they floated along. But here they were, as high as ever above the ground.

A little distance beyond the last hut, we came upon a number of bare-legged, sandalled Mexicans shivering in their red *serapes*. They had scraped away the surface covering of pumice and were grubbing up a bed of clay — literally making "bricks without straw." This recalls one of the greatest delights of city life in Mexico — the house with a *patio* or open central court, bright with sunlight all day and glistening in the starlight or moonlight at night. Yet in such a house one lives more secluded than in a solid American dwelling. It is an ideal home for such a climate as this — perpetual camping out.

We realized why these adobe houses blended so

naturally into the landscape, seeming more like natural dunes or mounds than artificial productions of mankind. Here we stood and watched these dusky natives hew out the very ground, add a little water, mould into large rectangles, pile one upon the other, and lo! one's house is built! No wonder the outer walls become lichened and weathered as soon as they are erected. The adventitious vines and weeds which sprout from wall and roof grow from seeds which, like the Egyptian wheat kernels, may have been long buried beneath the barren pumice. A home well worth living in, where one can plant flowers and vines in the walls from base to roof, where one's window-pot of bloom may root, not in the pots, but in the very window-sill itself! Why not a kitchen garden growing *on* the kitchen, where are earthen furrows, instead of lapping shingles!

How close to Nature one seems to live thus! closer to Mother Earth than did Thoreau at Walden; and yet when this framework of mud is clothed within with clean plaster, in rooms cool-tiled and with ceilings of taut linen, sleep and study and the joy of very life come in pleasantest forms.

It is in the making of gardens and to the lover of flowers that one thinks of a *patio* as ideal. Pitiful is the remembrance of the unfortunate plants which struggle for life in the steam-heated houses of the North, when we see our Mexican indoor, open-air garden.

Coffee-trees are beaded with their red fruit, carnation and geranium bushes reflect brilliant masses of colour. To walk to parlour or dining-room we pass strawberries, great heliotropes, and climbing ferns, and all through the moonlight nights, the odour of unpicked violets and gardenias passes like incense throughout the whole house.

What city veranda or back yard can compensate for the delight of being able to recline on one's couch and watch the wonderful hummingbirds, attracted by the flowers, shoot down into one's very house, or again in the dusk when those ghosts of hummingbirds — great gray sphinx moths — visit the *patio*, uncoiling their long tongues and drawing up the sweet nectar from the calyxes!

But to return to the fields which stretched beyond the makers of bricks. It is not difficult to describe a Guadalajara winter landscape where the last drop of moisture fell in October, and the sun shines unclouded by storm until the following June. Here and there, far apart, we saw large mesquite-trees, but besides these the eye rested only on maize-fields, with the brown stalks of the last crop still standing. These fields are divided off, not by fences of stone or wire, but by ditches eight to ten feet in depth and as many wide, while along each side runs a fringe of tall cactus, making trespassing often a difficult and painful process. These inverted fences are to drain off the excess water

during the season of rains, but we found them useful for reasons of our own.

Our progress was at first discouraging. The way was hot and dusty, and the cornstalks crashed under the lightest step, alarming all the birds for yards around. At last, while watching a hummingbird

A GUADALAJARA DITCH

through my glasses, I slipped and fell into a ditch and I remained there the rest of the day, not because of inability to get out, but because I found these ditches most delightful and profitable places in which to ramble. Ramifying as they do about every field, we made our way in any direction without ascending to the ground above. The broad green pads of the cactus arching overhead shut out the glare of the sun, while the lacework skeletons of the fallen leaves made our footsteps noiseless.

But all this was to little advantage if these sunken avenues offered no attractions to the birds and other wild creatures. Our most sanguine hopes were realized, as future walks demonstrated. Not only did the birds and small beasts rush to the protection of the ditches when alarmed in the open fields, but here many had their homes, here the birds roosted at night, and a much larger number found their food by day. We might have rambled for weeks through the fields, and have credited this semi-desert region with a much more meagre fauna than was concentrated in these cool and pleasant alleys, where we were as secluded as if miles away from the city, although in reality only a few hundred yards from the end of the streets.

The Desert Sparrow Hawks[1] were as abundant and

[1] Two Sparrow Hawks which were shot by a young Mexican were typical of the Western race *phalœna*. Whether our common Eastern form was represented we could not determine, as we were not able to distinguish the characteristics in the living birds.

THE DESERT SPARROW HAWK

tame in this locality as all along the railroad from the eastern coast. The little fellows seemed to have staked out claims for themselves, over which each individual held sway, levying heavy toll upon the mice and grasshoppers within his chosen domain. About every fifty yards along the rows of cactus, a Sparrow Hawk had his perch, from which he occasionally sallied to snatch an insect from the ground. Now and then a Marsh Hawk skimmed past, reflecting in his flight every inequality of the ground. As he passed from the range of one Sparrow Hawk to another, each in turn rose and fluttered above him with complaining cries, and long after the larger but inoffensive bird had passed from our sight, his course might be traced by the succession of irate Sparrow Hawks shrieking their "*chilly-chilly*" at him.

The most abundant bird hereabouts was the Clay-coloured Sparrow. It brought to mind the Chipping Sparrow of the North in its tameness and general appearance. Flocks of hundreds of these little birds fed upon the weed-seeds among the dead corn, and after a hawk had passed we might almost step upon scores of them, so closely did they hug the ground in terror. When they rose, it was with a whirr of wings worthy of a much larger bird, a short flight and a swift, long run behind a sheltering furrow. Almost as abundant were the Western Lark Sparrows, haunting the fields and ditches. The handsomely marked head, black-centred

breast, and white-tipped tail of this bird make it easy to know at sight. It has not the trace of a crest, yet a habit of often raising the feathers on its head would certainly lead a casual observer to credit the bird with such an ornament.

No lover of birds need be ashamed of the exclamation "Purple Finches!" which he would be sure to utter at first sight of the large flocks of birds in the fields, and often in the very streets of Guadalajara. They are House Finches, and although belonging to the same genus and very like in plumage to the *purpureus* of our Northern cedars, yet they are radically different in habits. Like the Bob-Whites and certain other birds, the House Finches of Mexico are split up geographically into eight or nine races, and the subspecies inhabiting this region is designated the Cuernavaca House Finch. They are the English Sparrows of Guadalajara, and they are indeed a vast improvement on that interloper. Their delightful colouring and sweet, warbling song, uttered often from the dusty streets, made us realize all the more forcibly the total lack of charm of *Passer domesticus*. Sometimes about sunset fifty or a hundred of these House Finches in all stages of colouring — from brown through particoloured hues to pink or deep rose — would rise from the fields and pass with a slow, fluttering flight over our heads westward, all singing their sweetest. It was a most unexpected pleasure, repeated again and again.

CUERNAVACA HOUSE FINCH

Apparently their song was as perfect now in January as during the nesting season, a few months later.

Once and once only did I see the Arizona Pyrrhuloxia in Mexico. My sudden but fortunate descent into the ditch alarmed a pair of birds which flew up and gave me a full view of their beauties — Cardinal-like

in action and crest, but a delicate light gray in colour. The female bird had just a suggestion of rose upon throat and breast, but her mate, perching with half-opened wings, glowed with the pure warm colour from forehead, breast, underwings, and flanks. After a minute both birds disappeared and evaded all further search.

No matter how dried up a place appears, some flower or plant finds nourishment enough to grow, and the ditches and corn-fields of a Guadalajara midwinter were no exception. Tall, thistle-like Mexican poppies sent forth their pale, lemon-coloured flowers, brightening the dusty plain, and among the weeds growing from the sides of the trenches were multitudes of tall stalks bearing long, pendulous, scarlet blossoms, a species of wild lobelia. Our favourites among the few blossoms of this season were little wild ground verbenas which purpled the parched furrows in many places. Their leaves were brittle, their roots seemed as dry as a husk, yet they managed somehow to grow and blossom in numbers.

The most interesting objects for the botanists were the many curious seed-pods of the weeds and other plants hereabouts, from the great fruit clusters of the castor-oil plants to the tiniest of seed-plumes.

As we rambled through the trenches we sometimes brushed against a mass of large golden globes, strung close together along the leafless twigs of the plant —

brittle and five-sided and as light as air. They reminded one in shape somewhat of the sea-jellies (*Beroë*) which drift in the currents of the ocean. And the simile is not confined to the exterior, for within hangs a small round sac containing the tiny flat brown seeds, just as, in certain of the animal jelly-fishes, the pendulous stomach is swung. Out of curiosity I counted the seeds in one of these seed-vessels and found two hundred and fifty-three. A single branch which I brought home with seventy-nine globes would, therefore, scatter some eighteen thousand fruit. The least touch or

SEED-PODS

breath of air sets each of these many seeds vibrating within their hollow spheres, producing a sweet, sifting tinkle, comparable to nothing I have ever heard in Nature.

In the Guadalajara ditches we began to realize that Mexico is a land of thorns and spines. Indeed the seeds are about equally divided between those furnished with hooks or spines, and those intended to be wafted away by the wind. One low, spreading bush has a double chance for distributing its seeds. When it dries up, the stalk breaks off almost at the first breath of air, and the light, thorny mass, more or less globular in shape, is rolled and tumbled far across the fields. Several times a number of these bushes blew toward us so rapidly that we could not escape them, although we knew from experience that much time and patience would be necessary to free our clothing from the barbed and rebarbed burrs.

How we wished for handbooks to name all the seeds and plants, but the price one must pay for the pleasure of rambling among birds and flowers in a little-known country is that one must, like Adam, give his own arbitrary common names to many of the objects he observes. It is very disappointing, too, when one returns and finds that an appropriate title which one has bestowed and which, from daily repetition for months, has become closely associated with the bird or flower, must be replaced by the name of some describer or

prefaced, in some instances, by an adjective neither euphonious nor appropriate.

The most abundant objects in the ditches were grasshoppers which tumbled down from the fields above and could not escape. So here the birds found a feast continually renewed, where they might eat their fill from morning until night. The White-rumped Shrikes knew of this ample supply, but had to manœuvre carefully to keep out of sight of their rivals, the Sparrow Hawks. These beautiful butcher-birds kept close to the cactus tangles. Twice we saw small birds attacked and killed by the shrikes, and each time, although the onslaught was made among a large flock of Clay-coloured Sparrows, it was a Western Grasshopper Sparrow which was the victim. Who can tell the reason for this? Did the glint of gold on the wings of the little finches catch the shrike's eye, or did some slight lack of skill in dodging turn the balance of fortune against them? If only we might take, at such moments as these, the "bird's-eye-view" of the shrike, many problems of evolution and the "survival of the fittest" would become plain!

One feathered inhabitant of the cactus ditches eluded identification for a long time. It was a "chunky" brown bird, looking more like a big female English Sparrow than anything else, but with a knack of slipping out of sight just before one could focus one's glass. At last we traced it to *Pipilo*, although it little resembled our

Northern Chewink in actions. *Pipilo fuscus* brought us nearer to its special name, but not until later did we learn that its common name was a literal translation — Brown Towhee. While we were in Mexico, it was to us "*Pipilo fuscus*," which slipped behind the cactus screen or skimmed up and over the adobe walls — more mouse than bird.

A closely related but much handsomer bird was the Green-tailed Towhee, not a *Pipilo* despite his name, but intermediate structurally between the true towhees and the group of White-throated Sparrows. It certainly reminded one of both groups. Like the Brown Towhee it kept to the weed tangles of the ditches where it was easily watched as it fed on the small seeds and the lesser grasshoppers. It is strikingly marked with a rufous, almost red cap, and a white throat, grayish green above and brighter green on the wings and tail. A mewing note, like that of a Red-eyed Vireo, was the most common utterance of this bird.

Day after day tiny green-garbed warblers traversed the ditches, confidingly seeking their diet of smallest insects, within a few feet of us. What could they be? We puzzled and puzzled over them in vain. At last I secured one and we made sure of the identification, —scientifically, *Helminthophila celata lutescens* (Ridgway); commonly, the Lutescent Warbler. To my mind a bird in the bush is worth a whole flock in the skin drawer, but the characters of modern classification

often require more than the eye and the opera-glass can reveal. And indeed, aside from the delicate gradations of colour and form, it is often a most difficult thing to recognize on sight, a bird, the description of which one has read several weeks previously. Some character seems to be added or something lacking, such is the effect of the environment and the excitement of seeing a new bird for the first time.

We took our meals at the delightful *El Sanatorio*, where one finds a haven of good American cooking in a land of beans and fried unleavened corn-cakes. The two-storied *patio* was always filled with flowers, great geraniums and heliotropes making the air fragrant by day; and the immaculate cereus blossoms pouring forth their perfume in the moonlight. During January and February the entire front of the building was a mass of purple *Bougainvillea*.

What a source of curiosity a naturalist and his wife are to fellow boarders! Many people seem incapable of believing that any one can be so foolish as to waste time in watching birds and insects for mere pleasure. When we would return from one of our camping trips, this one would have a suspicion that I was secretly prospecting for gold; another would be sure that I was surreptitiously locating marketable timber. But finally one and all expressed astonishment that they had been living so long with eyes blinded to the beautiful things of the world. They began to realize that the

birds of the surrounding gardens and fields were more than "just birds;" that they had colours and songs, traits and habits, interesting because of the hidden meanings of each — for protection or recognition, for safety of themselves, their mates, or their young. And behold, the pure gospel of God's out-of-doors had won more converts! Then they began to flood us with questions. To satisfy them all would have necessitated giving up many walks and rides. So we turned over to them Mrs. Bailey's "Handbook of Western Birds," which we had found so useful, and many and strange were the discoveries that they made. We ourselves knew only too little about Mexican birds; but when marvellous notes of pink-breasted, blue-eyed hawks and long-legged hummingbirds were given us in all good faith for verification, we gave up. It is indeed remarkable how differently a bird will appear to a number of untrained observers. Whether owing to a widespread partial colour-blindness, or to the elusive glints of sunlight on a bird's plumage, the range of colours and size with which a single unfortunate bird may be endowed, is astonishing!

Although in our walks about Guadalajara we saw thousands upon thousands of cactus-trees, their strange structure and appearance never ceased to impress us. There was nothing to which they could be compared; the great trunks and massive branches were very different from those in our Northern conservatories. Only

in the tubular yellow flowers does the nopal cactus seem to have affinity with other plants. These flowers spring adventitiously from the sides and edges of the pulpy, spiny pads — one can hardly call them leaves. A discovery which was as interesting to us as though we were the first to record it was that the oval pad is the unit of which the entire tree is composed. The two or three terminal pads were usually bright green and covered with groups of the unpleasant spines. The next was greenish brown in hue, with blunted spines and the succeeding ones merged more and more completely into one another, at the same time becoming thicker and developing a false kind of bark. This resulted in a rough, brown-barked trunk and spineless branches, which appeared identical with those of old, gnarled apple-trees. A close examination would, however, show faint traces, down to the very ground, of the internodes between the units. How curious, too, when a dead branch fell, to see a tightly wrapped bundle of delicate lace fibres instead of splinters and decayed wood. We wondered how the birds could alight so suddenly upon the spiny pads without being wounded. Indeed one Lark Sparrow was impaled as it attempted to dart through a maze of the sharp points. But mockingbirds and towhees, finches and shrikes seemed never to hesitate an instant in perching.

Two species of hummingbirds were always to be found along the ditches, conspicuous to eye and ear.

When first we caught sight of a tiny form perched upon a twig, we realized that we were indeed in a new world of birds, for this was no Ruby-throat.

To our Eastern eyes this was a strange, foreign bird; but a Californian would have recognized it at once. It was the Costa Hummingbird, like ourselves, a winter visitor to these parts. His mite of a body was green above and whitish below, while his head was encased in a marvellous helmet of burnished violet, an amethystine scale armour, which flashed blue, green, and violet by turns. This was the most abundant hummingbird of the Guadalajara ditches, during the first week in January. The first individual at which we had a good look proved to be in exceptionally perfect plumage. The others of his kind were young birds in moult, with the iridescent feathers few and scattered, the majority being still buried in their enfolding sheaths. After a week all the individuals of this species disappeared and we saw no more during our stay.

A second hummingbird, typical of the ditches, was clad in green and buff, with a gorget of gold, green, and fiery red. This was the Rufous Hummingbird, and we were glad to see him in the life; for his fame as a traveller had long been known to us. Here he was near the northern limit of his winter home; but in the spring his race will hum away to the mountains of the North, some content to nest in the higher altitudes of the Western States, but many brave little fellows

traversing Canada, on and on until they sight the snow peaks of Mt. St. Elias in Alaska, far north of Sitka. The little fellows were ever squeaking and humming about our ears, disputing our invasion of their hunting-grounds.

These noisy little *chuparosas*, — flower-suckers, — as the Mexicans call them, not only flicked the insects from the flower-cups, but spent much time humming through the ditches, low over the ground. We could not imagine their errand, as it seemed hardly possible that they were attracted by the grasshoppers, some of which had bodies larger and heavier than their own. A struggle between a Rufous Hummingbird and a giant hopper would indeed be exciting! What a sight it would be to see the wee bird perched vulture-like upon the huge insect and dismembering it!

When, by patient watching and the dissection of one hummingbird's stomach, we discovered the truth, we found it indeed to be more strange than fiction. Like almost all the birds of the ditches the hummingbirds were really feeding chiefly upon grasshoppers. The sentinel Sparrow Hawks seemed to capture the largest insects, pulling them apart before swallowing. Those which were snatched up by the shrikes were of a smaller size, while the finches and lesser sparrows fed upon the partly grown hoppers. We were delighted to find that this corresponding diminution in size, correlating the birds and their food, was even carried a step

farther, so that the tiny hummingbirds were provided for. Wee harlequin grasshoppers, gaudily attired in black and white, yellow and red, were snapped up by the score and were just of a size for a mouthful for a *chuparosa*. These miniature grasshoppers were full grown and widely distributed throughout the country.

After a moment's silence in one of the cactus-shaded ditches, the little inhabitants with fur and scales made their presence known by sudden scamperings and dartings here and there. It was here we began to learn the lesson which week after week in Mexico enforced, that a rustle among the leaves, slight or vigorous, nine times out of ten was made by a lizard, the commotion being out of all proportion to the size of the reptile.

A forty-inch Iguana could steal almost noiselessly through a mass of brittle leaves, while the flight of a diminutive "blue-tail," not more than three inches from head to tail-tip, would sometimes sound like a whole band of scratching towhees or white-throats. It was hard not to watch instinctively for the supposed bird in the near-by bush, and the minutes we spent at first in this fruitless way, if collected, would equal many hours.

Pouched rats (*Geomys*) were very abundant in the ditches, and scores of their burrows tunnelled the sides. We occasionally caught one in a box-trap and made it turn out the contents of its capacious cheeks.

It was astonishing to see the amount of seeds which one of these creatures could pack on each side of its yellow incisors. No wonder the weeds produced seeds in such quantities if the Pouched Rat was only one of many creatures which enjoyed the sweet meat of the embryo plants. These rats were very pugnacious and constantly fought among themselves, chasing one another and clinching — biting severely, if we judge from the sharpness of the squeaks which proceeded from the rolling, tumbling combatants.

JALISCO POUCHED RAT
(Showing cheek pouches)

Spermophiles — prairie-dog-like, but with their backs decorated with white lines and dots — surprised us by peeping out of the entrances of their ditch homes and squeaking excitedly to each other the moment we disappeared around a bend. When a towhee was startled by us and saw no means of escape, it sometimes darted into the nearest hole, from which, if the inhabitant was a *Spermophile*, the bird was promptly ejected by the owner, — choosing the less immediate danger of flying out past our very faces.

One could not take a walk on the outskirts of the city without noticing the miniature whirlwinds, six or

eight often being in sight at once. On the alkali plains these reached their highest development, but here among the corn-stubble we could watch their formation and motion on a lesser scale. When the air about us was perfectly calm, a circling of dust might begin fifteen or twenty feet away, which increased in strength and velocity until the vortex was plainly discernible. It usually moved steadily in one direction, but would sometimes make a sharp angle without warning. The dust and debris were now drawn up until a wavering brown finger extended fifty feet or more into the air. The summit tapered to a thread and the whole was frequently thrown into violent contortions without breaking the continuity. Such a column might pass unchanged out of sight, or it might break off at the base, and the mass of leaves and dust go sailing up through the air, until some counter-current interrupted the whirling, and the particles drifted to earth. Sometimes a sparrow was surprised at his feast of weed-seeds and as he took to wing, his feathers were ruffled and his balance almost upset by the aerial maelstrom.

There were certain birds which, like the House Finches, identified themselves with the city itself and, indeed, with almost all the larger towns and villages in Mexico. Not an English Sparrow seemed to have found its way to this fortunate country, and taking the place of these feathered pests was the dainty Audubon Warbler, which is almost identical with our well-

known Myrtle Warbler of the Eastern United States, except that the throat of the former is yellow instead of white. But ours is a bird of the woods and parks, while the Audubon haunts the *patios* and adobe walls, showing the utmost familiarity with men and animals. Every city had its corps of feathered scavengers of which Audubon Warbler was the least, as the Turkey Vulture was the greater. For the little bird had forsaken the trees and insects, which elsewhere are its natural habitat and food, and found more to its liking among the *tortilla* and *frijole* crumbs, with perhaps a sprinkling of the spiders which so love the ill-kept *patios* of the poorer classes. Although we occasionally found it far from the haunts of men, yet we shall always associate the yellow, gray, and black of this warbler with the heart of the towns.

Almost as familiar and tame were the little Inca Doves, scaled from head to foot and with long, tapering tails. These brown, bobbing forms of the dust flew up with a flurry of wings from beneath our feet on almost every pathway. They had as little fear of man as the chickens and pigs which disputed the right of way.

Two species of grackles, or blackbirds, were always found in the parks and gardens of Mexican cities, at least in winter, — the small, yellow-eyed, iridescent Brewer Grackle, and the grandest of all his kind, the Great-tailed Grackle. The latter was a conspicuous feature of all the public *plazas* and parks, its black

form flapping slowly past, with sharp-keeled tail spread wide behind. Their voices were surprisingly musical — for grackles — and contrasted strongly with the harsh utterances of the other blackbirds and cowbirds.

One of the sweetest of bird voices was heard about the adobe houses of the city every day — the dropping song of the Mexican Canyon Wren, but, as in the song of a caged bird, something seemed lacking, some quality which we knew should be in the strain, although we now heard it for the first time. These little dark-feathered bundles of tireless energy would creep like mice up the adobe walls, and from the top the white throats would pour forth the gushing floods of melody. Later, on our camping trips to the wild *barrancas* and gorges, we heard the Canyon Wren in his true home and his song at its best — a dominant strain in the melody of Mexican Nature. The beauty of the birds' natural wild environment gave to them and to their song a charm which was absent in the birds of Guadalajara. After our return to the city, memory always supplied the rocks, the ferns, the accompaniment of falling water, the — something lacking. Once, shortly before we said good-bye to the country of which we have grown so fond, when "Señorita" was overcome by the heat, a Canyon Wren flew into the open *patio* window, perched on a chair-back, and sang his little song with all his might — soothing pain with a flood of pleasant memories.

I have mentioned flocks of the Cuernavaca House Finch as haunting the suburban stubble-fields, and many of these birds were also found in the city itself. During one whole week a brilliant-plumaged male sang to us from the same tree each day as we passed on our early morning walk— a sweet, well-modulated, pleasing strain which revealed the reason for the numerous captives in the bamboo cages hanging in so many doorways and *patios*. These were, however, more rightly *yellow* than purple finches, a caged life producing this change in colour after the first moult, which becomes more pronounced with each succeeding shedding of the feathers. Once I saw a wild male bird singing to a caged female, and again a male at liberty offered a beakful of straw to a brown lady bird in a bamboo prison.

Our most pleasant memory of these birds is of a mated pair in full plumage on an adobe wall, the male bringing straw after straw to his mate and piling them at her feet, she paying no attention for a time, absently preening her feathers. But before we left them she made two trips, carrying part of the pile to a ledge under the tiles where the foundation of the nest was already in place. The male sang almost continuously, even uttering a few chirps and twitters while flying up with a straw in his beak.

There are few people in the western portion of our country who do not know the well-named Yellow-headed Blackbird, but for us Easterners its habitat is

only the handbook and the museum. From the former we learn that it ranges south over the Mexican table-land, but no Yellow-head appeared to us during the winter, until one day in March, about six o'clock in the evening, we were taken wholly by surprise by seeing a male in full plumage perched upon the top spray of a mesquite-tree. Soon others joined him, many likewise golden of head and neck, and a few more sombre females. After this day the evening flight became a regular occurrence, flocks of hundreds coming from the open country to perch in the upper branches of the larger trees in *plaza* and *patio*.

From where we sat in the evening, four or five trees bare of leaves were visible and almost at the same moment, at the close of each day, the birds appeared from somewhere and alighted on the bare branches. Never had I seen birds perch so close together as did these Yellow-headed Blackbirds. They formed literally a solid mass. When the birds were frightened, the several trees gave up a myriad swift forms, which sometimes swooped past us with a great roar of wings. Their liquid chirps and gurgles were not unmusical, and when the last rays of the setting sun were reflected from five hundred golden breasts, all facing the same way, it was a most resplendent sight. When all had arrived, as at some preconcerted signal, every bird took to wing and the flocks distributed themselves in the neighbouring trees for the night. As we stood near

one of these roosts, a perfect babble of voices was audible above the rustling leaves and twigs. As darkness settled down the confusion grew less, the chirps more individual, and when the swift tropic twilight had passed, all was silent, save for a last subdued sleepy gurgle — and the world of Yellow-heads was at rest.

A GUADALAJARA EXPRESSMAN

CHAPTER IV

OASIS AND DESERT

GUADALAJARA is surrounded by a most barren country, but as every desert has its oasis, so this charming Mexican city has, almost within its limits, a little "watered wood" to which a lover of Nature will return again and again. It is reached by a short ride on a mule-car, this alone always promising excitement. If the flattened rails, in the uncertainty as to whether they will squeeze the wheels until they shriek, or whether they will allow the car to ramble gutterward at will, are bewildering, the switches are positively uncanny in the remarkable actions which they cause a car to perform. Rarely the car succeeds in proceeding upon the track intended. Sometimes it fails altogether, and there ensues a bewildering mixup of six mules, the two cars running together as closely as the kicking animals will permit. Again, the front truck will obediently follow the tugs of the mules, while the rear wheels endeavour to side-track themselves, as a result swinging the car crosswise in the street. But no one ever loses temper, or hurries, so difficulties unwind in due season.

The most remarkable manœuvre is a flying switch performed with a single mule, a diminutive car, and a bridge built across a sand-gully on a road leading to the northwest of the city. As the car approaches the

THE OUTSKIRTS OF GUADALAJARA

bridge, a full gallop is attained by means of constant and vigorous applications of the whip, while the conductor hurls stones and Spanish epithets at the wildly flying mule. At the critical moment, just as the open ties are reached, the mule's traces, in some inexplicable way, are cast off, he is swerved into a path at the left of the road, and, well trained by long experience, dashes down across the gully and up on the other side, where he trots slowly along the track. Simultaneously with his frantic scramble, the car's momentum carries

it across the bridge and up to the place where the mule is jogging along, when his traces are refastened and the regular gallop is resumed. As a spectacular performance it is worthy of being instituted as a circus feature!

The way to *Agua Azul*, or the "Blue Water," as the oasis is called, is along a path shaded by two lines of willows, and a few minutes after leaving the city one alights in the midst of a garden full of old-fashioned flowers in blossom. A little way beyond, a stream broadens out into a good-sized lake dotted with little wooded islands. In all directions, green marsh and undergrowth and luxuriant willows offer ideal conditions for bird life. Here birds of many kinds have congregated for untold years, and a wise governor, loving them as a boy and looking forward to their ultimate fate, had a law passed as soon as he came to power, forbidding all shooting and trapping in *Agua Azul*.

The birds, here as everywhere in the world, instantly appreciating their security, haunt the spot in myriads and are remarkably tame. Guadalajara has no need of aviaries and flying cages, for here is one prepared by Nature. Unlike so many bird-beloved spots in our United States, it has not been abused by the people, and has not had its protective laws enacted only when the time has forever passed for their usefulness.

The little public park or garden at the edge of *Agua*

Azul was not large, but it was filled to overflowing with the best of all flowers — the old-fashioned ones. Poppies, petunias, marigolds, and hollyhocks flashed colour rank upon rank, with larkspur as homelike as ever grew in a New England front yard, while heliotropes stretched their purple heads five feet above the

THE FLYING SWITCH

ground, losing no sweetness nor gaining aught of coarseness from their luxuriant growth.

Apple and orange trees are scattered among the willows, and upon a single branch we often found ripe fruit and fresh-blown blossoms. Through and among

all the beauty dashed the Vermilion Flycatchers. Nowhere else in Mexico did we see them as tame as in this beautiful garden. A male in full plumage seemed to outburn every other scarlet object in Nature. His back, wings, and tail were dark gray, as if the scarlet had really burnt itself out in these portions. His round, full crest and underparts, from bill to tail, were flaming brilliant red. There were also numbers of young males, scarlet only to the breast, and females with throats and breasts of cooler, grayish hues. Their favourite perches were the stakes which supported the vines and weaker plants, and thence they dashed groundward for small moths and grasshoppers. No note was heard save when one bird was pursued by another; then the two streaks of crimson gave utterance to loud, shrill chirps.

This beautiful creature must have had some talisman which guarded him from the fate which overhangs brilliantly coloured birds, for he seemed to have no fear of showing his beauty. There was no attempt at skulking or concealment. He selected a bare perch, with his breast turned toward the sun, and now and then flashed out and back — a spot of brilliance which could not be overlooked. Although we watched long and carefully, we never saw a Vermilion Flycatcher assailed or threatened by shrike or hawk. Sometimes a Ground Squirrel rushed at one in a rage, but the bark of a Ground Squirrel is much worse than its bite, so this

sham threatening meant little and the flycatcher acted as if he knew it.

The sole thing from which these brilliant birds might have derived protection was the abundance of red

Photographed by R. H. Beebe

BELTED KINGFISHER

flowers and the occasional solitary scarlet leaf. From the railroad train we frequently mistook flower or leaf for bird. But after all, it is probable that his immunity from danger is due to the well-known pugnacity of the race of flycatchers.

We found flycatchers abundant in species and numbers throughout Mexico, but none more beautiful

or vivacious than the well-named *Pyrocephalus*. How we longed to see him at home, when building his nest, but as we could not wait for him until May, we could only feast our eyes upon his beauty and listen for some hint of his love-notes.

Enormous grackles flocked among the upper branches of the willows, their rich notes bubbling and gurgling forth in a constant stream. A low adobe wall, less than a foot in height, shut out the marsh from the garden, and, as we approached this, a Belted Kingfisher flew to a stake and rattled loudly, then dived and began his morning's fishing. Like ourselves, he was probably a winter sojourner from the North, but before we returned in April something would have whispered to him that the ice on his mill-pond was breaking up, and one moonlight night he would spring into the air and beat steadily toward the Rio Grande, heedless of fish or rest, until he reached the branch which, year after year, has bent beneath his weight. The roses and orange blossoms will then be many leagues to the southward, but could the bird feel as we, would he not feel a keener thrill at the sight of the first arbutus pushing up by the snow-bank, just as our pulses leap more quickly at the thought of the good old virile talk and laughter echoing through the keen spring air of the bird's Northern fishing-grounds than at the smooth, drowsy sound of the Mexican tongue? One may travel to the ends of the earth and put

half the globe between him and his native land, yet, when there comes to eye, ear, or nostril the veriest hint, — a scent, a sound, a glimpse of feathers blue and white, — the mind pours forth a flood of memory which eclipses, for the moment, all nearer, stranger scenes.

Over the marsh wall ahead of us scrambled a score of ivory-billed coots, splashing down among the water hyacinths and swimming slowly away, without the least sign of fear. Beyond were Blue-winged Teal, Pintails, and Mallard Ducks; while several Shoveller drakes, in their beautiful spring dress, were noisily sifting the mud through the *lamellæ* of their broad bills.

A PINTAIL DUCK, A CAPTIVE WILD BIRD

Nature has given this duck an awkward, heavy-looking bill, which, however, serves a most useful purpose; but she has more than made it up in the beauty of colouring of the plumage — a livery of white, black, green, chestnut, and delicate blue. A quartet of Cinnamon Teal sprang into the air from where they had been feeding at our feet. This was a species of duck new to us, easily recognized by the bright cinnamon colour on head, neck, and breast. Here were three birds in sight marked with that pale, beautiful blue — one of the most delicate of Nature's hues.

The dense mass of water hyacinths, for many yards around, was eaten close to the level of the water, testifying to the abundance of wild birds at this spot. The coots now reached the opposite bank, twenty feet away, and settled down for a nap or walked slowly about. Their peculiar curtailed appearance gave them a lifeless, wooden effect which was increased by their awkward gait, lifting high their great green-lobed toes. If one were to remodel a coot it would seem more reasonable to reduce the size and weight of its feet and add somewhat to the diminutive white bill. But Nature has fashioned the bird thus in order that it may safely tread upon the quaking marsh and pick out the small snails and worms from among the thread-like roots of the hyacinths.

As we continued our walk along the stream, the lake came suddenly into view, and a beautiful sight was

before us. Less than fifty yards away a company of two or three hundred ducks were sunning themselves, all crowded together on the bank. On a promontory still nearer was a flock of seven or eight hundred White-

GREEN-WINGED TEAL, CAPTIVE WILD BIRDS

faced Glossy Ibises, many sleeping balanced on one leg, others preening their feathers. Two large grebes, perhaps the Western species, floating out near the middle of the lake, completed the tale of the water-birds.

Beyond a field of alfalfa, with its dense green foliage shot with the blue flower-heads, was a stone wall, and on this two great American Ravens were busily engaged in feeding upon something which they held down with their feet. At first glance we thought it must be the

bodies of small birds, but we soon observed the ravens flying back and forth from the stream, each time bringing a hyacinth plant, which they carried to the stone wall and carefully examined, evidently devouring the many small snails and worms which found shelter among the roots.

The most conspicuous flycatcher of the cactus country was the Ash-throated, a noisy bird, feeding chiefly on the insects attracted by the cactus blossoms, and when these were scarce, devouring many varieties of small fleshy fruits. It was very similar to our Northern friend the Crested Flycatcher, but was paler yellow below, and, as its common name implies, its throat was almost white. As the two ravens rose at our approach, one of these flycatchers appeared from a field beyond, and kingbird-like, gave a thrashing to first one and then the other, descending with his full force upon head and back and more than once sending fluffs of black to the ground.

When both ravens had disappeared, the flycatcher returned and instantly gave his attention to a Western Red-tailed Hawk. Uttering his loud *che-hoo'! che-hoo'!* the brave little creature dashed at the bird of prey, striking blow after blow, the hawk meanwhile never attempting to retaliate, but making every effort to escape from his small tormentor. Thus early in our trip the Ash-throated Flycatcher established a reputation for bravery which it always sustained.

We learned that early in the morning even greater numbers of ducks congregated here, so one day an early start brought us to the Blue Water before the morning chill was out of the air. A search some distance upstream revealed a fallen log bridge, which we crossed, and, hidden by the tall undergrowth, we made our way down to the marsh bordering the lake itself. Crouching among the reeds at the edge, we enjoyed an uninterrupted view of this paradise of water-birds. Hundreds of rippling wakes intersected each other as coots, gallinules, ducks of many species, and occasionally sandpipers, swam here and there; the webbed swimmers turning tail upward and gleaning from the muddy bottom; the snipes and sandpipers scurrying in the shallows. Out near the centre of the shallow lake, near the edge of a small islet, were several birds which we had long looked forward to seeing — Black-necked Stilts. Perfectly unconscious of being watched, they were taking an early morning bath, doubling up their slender legs and beating the water with their wings, exactly as flamingoes bathe. When thoroughly wet they flew one after another to a mud-bank, shook the water from their plumage in a shower of drops, and arranged every feather in place, standing in a row facing the rising sun.

Ducks whistled close over our heads, arriving in small flocks and settling upon the water with a slither which raised a multitude of ripples. And now a louder

wing-beat drew our eyes upward and a dozen cormorants — the Mexican species doubtless — shot past. Herons began to arrive — Great Blues, which sailed gracefully to the open water and alighted, becoming stiff and narrow, shapeless things until, assured that all was safe, they picked their way slowly about. Little Green Herons came close to us, creeping like shadows among the reeds, and snatching at the big flies which buzzed about.

Seven beautiful American Egrets trailed one after the other to the willows on the island and alighted, but they did not descend to the water during our visit.

AMERICAN EGRET, CAPTIVE WILD BIRD

They called up a host of pleasant memories; for we last saw these rare birds a year ago when the sun was setting across the waters of the Indian River in Florida. It was difficult to realize that even here, far south of the Tropic of Cancer, we were yet at only the very northern part of the egrets' range. Their white forms are found from here to the lagoons of Patagonia. They ask nothing from man, save leave to feed upon the fish and snails of the swamps, and they offer their beauty of form and feather to make a beautiful land still more beautiful. Hitherto man's love of gold and woman's vanity have overbalanced all humane and æsthetic sentiments. May some good fortune protect the egrets in the wild fastnesses of the southern continent, so that our country may, little by little, be restocked with these beautiful creatures!

The smaller sandpipers were legion in number, running back and forth along the edge of the water. The greatest surprise which the Blue Water had to offer came when we were about to rise from our cramped positions. Without warning, five birds appeared from among the thick reeds at our left and walked quickly, with mincing steps, to the water's edge, where they mingled unnoticed with the lesser waders. We knew them at once for jacanas. This quintet of birds at once absorbed our attention. We had read that the colours of the plumage of the Mexican Jacana were mostly black and a rich, dark chestnut; but from observing

these birds we should not have known it, so changeable were their feathers under the rays of the early morning sun. All that was lacking was for them to perform their wing-dance, such as Hudson describes in the case of a South American species. This was denied us, but they had a way of raising first one wing and then the other straight up, showing plainly the horny spur at the bend of the wing. This action was as graceful as it was inexplicable. The long thin toes and claws showed how easily they could pick their way over the floating lily-pads. The conspicuous shield of orange skin spread out upon the forehead was another bizarre touch in the appearance of these strange birds. When at last they sprang into the air for a short flight, each wing gave forth flash after flash of rich yellow; and by this characteristic we were always able to detect the presence of this species, even among a hundred other birds.

The roar of wings was like a high wind as we raised our heads above the surrounding reeds. Scores of birds, whose proximity we had never suspected, hurled themselves into water and air. The lake was churned into a foam as the hundreds of webbed feet thrashed its surface, and a sweet, shrill chorus of peets! sweets! arose from the cloud of shore-birds. The yellow wing-quills of the jacanas glistened in the sunlight as they wheeled outward; the wing speculums of the ducks flashed like mirrors. Yet with all the uproar and

startled flight, the alarm was very different from that of Northern birds fleeing from the man with a gun. In a few minutes, with the exception of a clear area in our vicinity, all were feeding as before.

We missed the Glossy Ibises of our first visit, but before we left they arose from their roost desertwards, coming in a great flock high in air. It is impossible to describe the beauty of their flight. The wings and general appearance of a tern, gull, or swallow gives us a hint that we may expect something exceptionally fine from them when they launch themselves upon the air, but these curved-billed, long-legged birds suggest ability to wade and run, rather than to manœuvre on the wing. However, as when one sees Wood Ibises soaring, the flight of a flock of Glossy Ibises changes one's whole estimate of the abilities of the species.

As one bird, the flock turns and dips and swoops toward the surface of the pond, rushing so close to its surface that the Great Blue Herons dodge. Then up they swerve again, and the sunlight is reflected at exactly the same instant from every iridescent wing. As they veer sharply in front of us, the full spread of every individual bird's back and wings is turned toward us; then, almost between winks, the Spirit of the flock has brought the profile of each ibis in sharp silhouette against the sky, — half a hundred birds which seem like one with nine and forty shadows.

I would give much to solve this mystery, shared by schools of fish and swarms of insects. Perhaps the closest we may approximate to this unity of many is when the rhythm of a waltz sways two dancers as one, or when improvising on stringed instruments with a person with whom one is in perfect sympathy, the sequence of harmony comes simultaneously to each. But the birds have no rhythm to aid them; the same ground is never gone twice over.

And now there comes, as if from the very heart of the sun, a second flock equal in numbers to the first, and the two vibrate back and forth over the lake. Once the Spirit of the flock — as it pleases me to call this sympathy of movement — appears undecided, as the birds hesitate a moment over a bit of marsh. A half dozen alight for an instant, but the time is not yet, and quickly they leap into the air again and seem almost to snap into their places. Finally, both flocks sweep in a horizontal plane over the marsh, bring up with a sudden short curve, and two hundred wings are folded and a hundred birds begin busily probing the hyacinths and muddy shallows; the compelling power has dissolved into entities, each perfect and individual, — the Spirit of the flock is no more.

The unwatered country about Guadalajara fulfilled our idea of a desert, but when we saw a real alkali waste, we agreed that the former region in no wise

Scott, photographer

THE ORGAN CACTUS

deserved the opprobrium. Long before the actual rains begin, vegetation seems to feel a quickening in the air; the plants scent the coming moisture weeks beforehand and spring to life, — except on the alkali plain. The very last glimpse we had of it showed no sign of spring, no hint of green or of returning life, no resurrection of flowers or even of blades of grass.

At night the moon looked down upon a desolate arid plain stretching away to the mountains on the horizon. The air was chill and a bleak wind searched out every fold in our blankets; we might almost have been spending a night on the Arctic tundras. Absolute silence reigned; neither coyote nor bird of the night broke the awful hush. If one was wakeful, it was a relief at times to grind one's heels into the pumice, or to speak — any sound making a welcome break in the everlasting silence of the desert's sleep. With scarce a moment of dawn, the sun flooded everything, a grateful warmth for a while, but soon to make us gasp in its breathless heat.

Where a thin, blasted rind of red-brown grass-stems partly covered the white dust, parched mesquite bushes found root, and strange, uncouth organ cacti reared their columns, like mammoth candelabra. Here wild-eyed cattle roamed uneasily, nibbling occasionally at the bitter grasses.

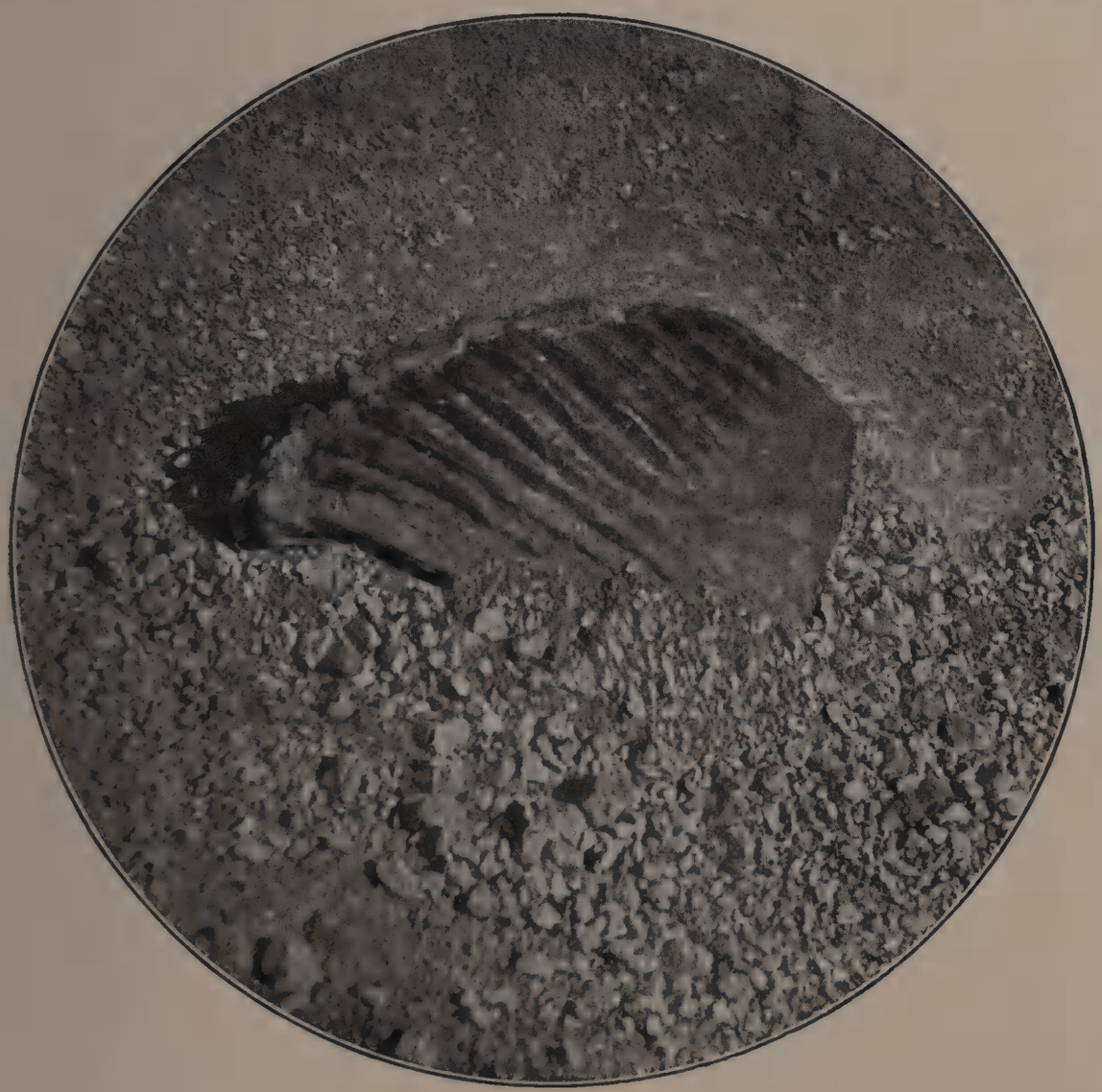
Farther out in the desert, where even the mesquite and cacti failed, we rode slowly across the parched sur-

face, wondering if a single living thing could endure the bitterness of the earth and air. In the distance moved the whirlwinds of dust, tall, thin columns with perfectly distinct outlines, undulating slowly here and there — both life and death in their silent movement. A distant *vaquero* is the focus of a great cloud of white dust raised by his horse's hoofs. Pools of dark water with white, crystalled edges now appeared, the liquid seeming little different from the solid plain.

Most remarkable it seemed to us when a Great Blue Heron now and then flew silently up from the desert and flapped slowly out of sight. What could possibly attract these birds to such a place of death as this — distant even from the bitter pools? Twice a great ebony raven sailed croaking through the dusty air over our heads — the same bird repassing. No other life was visible save the balanced black specks against the blue, as invariably a part of the Mexican day as the stars are of the night. Herons, vultures, and raven all moved slowly, seeming less alive than the distant columns of dust.

But we felt the real Spirit of the eternal desert when, as we turned to retrace our steps, we spied a something white, a something different from the surrounding earth, and the spell of past ages fell upon us. The bitter water was ever drying up, the whirlwinds carried the dust from place to place, the birds came and went as they pleased, but this relic of an elephant of the

olden time brought past and present into close touch. What scenes has the desert looked upon since this Imperial Mammoth staggered dying into the quagmire which proved its tomb? The dust caused our eyes and throat to smart, and we reluctantly turned our ponies' heads on the back trail, much as we should have liked to stay and search out the secrets of these fossils, —



FOSSIL TOOTH OF IMPERIAL MAMMOTH IN THE ALKALI DESERT

more fascinating, in their way, than the living beasts and birds which peopled the tropics beyond. For several months in the year a portion of this desert is buried under at least two feet of water. At the beginning of the dry season, when this evaporates, the barren wastes yield their only crop, — a rich harvest of fossils. Great curved ribs, mighty thigh-bones, and large, deeply furrowed teeth are washed to the surface — a stony harvest of ivory and enamel, relics of herds of Imperial Mammoths (*Elephas imperator*), which roamed the earth when man was first beginning to know his power.

One of the most wonderful exhibitions of bird-life in Mexico came to us as we left the alkali plain and rode among the mesquite scrub. A confused mass of black appeared in the air which, as we advanced, resolved itself into hundreds of individual specks. The atmosphere was so deceptive that what, at first, appeared to be a vast cloud of gnats close at hand was soon seen to be a multitude of birds, blackbirds perhaps, until we approached and thought them ravens, and finally, when a quarter of a mile away, we knew that they were vultures. Three *burros* lay dead upon the plain, — this we knew yesterday, — and here were the scavengers. Never had we seen vultures more numerous or in more orderly array. A careful scrutiny through our glasses showed many scores of Black and Turkey Buzzards walking about and feeding upon the carcasses of the animals,

and from this point there extended upward into the air a vast inverted cone of birds, all circling in the same direction. From where we sat upon our horses there seemed not a single one out of place, the outline of the cone was as smooth and distinct as though the birds were limited in their flight to this particular area. It was a rare sight, the sun lighting up every bird on the farther side and shadowing black as night those nearest us. Through one's partly closed eyes the whole mass appeared composed of a myriad of slowly revolving wheels, intersecting, crossing each other's orbits, but never breaking their circular outline. The thousands of soaring forms held us spellbound for minutes before we rode closer.

Now a change took place, as gradual but as sure as the shifting clouds of a sunset. Until this moment there was a tendency to concentrate at the base of the cone, that portion becoming more and more black until it seemed a solid mass of rapidly revolving forms. But at our nearer approach this concentration ceased, and there was perfect equilibrium for a time; then, as we rode up a gentle slope into clearer view, a wonderful ascent began. Slowly the oblique spirals swing upward. The gigantic cone, still perfect in shape, lifts clear of the ground and drifts away, the summit rises in a curve which, little by little, frays out into ragged lines, all drifting in the same direction, and before our eyes the thousands of birds merge into a shapeless, undulating

cloud, which rises and rises, spreading out more and more, until the eye can no longer distinguish the birds which, from vultures, dwindle to motes, floating and lost among the clouds.

GREEN HERON

CHAPTER V

THE MESQUITE WILDERNESS

WHEN our excursions began to take in a wider field, leaving behind the corn-stubble and ditches and even the semi-desert wastes beyond, we found ourselves in a trackless wilderness of mesquite and cactus. Wherever one stood he seemed surrounded with an open growth of the dry and dusty trees just too high to see over. A few steps farther they appeared less in height. When these were reached, the same monotonous glimpses of more mesquite, more gnarly cactus, was all that was seen, and for mile upon mile one was alternately stimulated with the hope of a more extensive view and disappointed by the result. No low vegetation covered the white earth, no water was to be found for leagues around, yet at times the spiny, dry-leafed trees swarmed with birds, all — with one exception — garbed in gray or earthy hues, in perfect tone with their surroundings.

The exception — the Vermilion Flycatchers — more than made up for the sombre colours of the other birds. In such a place, in middle March, dozens of the *coloraditos*, — little red ones, — as the Mexicans call them,

might be seen carrying on their courtship with enthusiasm, heedless of the blinding heat. Half-hidden on a spray of thorn-bush perched a shy *coloradita*, her dull striped breast and darker back merging softly into the gray environment. But ardent admirers had found her out, and one after the other tried their utmost to outdo each other in the little performance which Mother Nature had taught them. All thought of pursuing the gnats and gray-winged flies which swarmed about the cactus blossoms was gone, and, quivering with eagerness, the brilliant little fellows put their whole heart into their aerial dance.

Up shoots one from a mesquite tree, with full, rounded crest, and breast puffed out until it seems a floating ball of vermilion — buoyed up on vibrating wings. Slowly, by successive upward throbs, the bird ascends, at each point of vibrating rest uttering his little love song, — a cheerful *ching-tink-a-le-tink! ching-tink-a-le-tink!* which is the utmost he can do. When at the limit of his flight, fifty or seventy-five feet above our heads, he redoubles his efforts, and the *ching* and the *tinks* rapidly succeed each other. Suddenly, his little strength exhausted, the suitor drops to earth almost vertically in a series of downward swoops, and alights near the wee gray form for which he at present exists. He watches eagerly for some sign of favour, but a rival is already climbing skyward, whose feathers seem no brighter than his, whose simple lay of love is no more

eager, no more tender, yet some subtle fate, with workings too fine for our senses, decides against the first suitor, and, before the second bird has regained his perch, the female flies low over the cactus-pads, followed by the breathless performer.

Even after the choice was made and the two birds remained perched close together, the male occasionally performed his singing flight, his mate sometimes watching him, sometimes coquettishly ignoring his efforts and continuing her short darts after flying insects. Several times we noticed mated Vermilion Flycatchers in company with one or two young birds of last year. These were doubtless families which had remained united all this time.

To a person unfamiliar with the birds of Mexico and the Western United States, the mesquites were full of surprises. Occasionally a brownish gray form darted across our path, and, folding its wings, continued its course upon the ground with swift, running hops, darting behind each bush and clod of earth. A moment's watching, and its curiosity forcing its head into view, we noticed the most striking character of the Curve-billed Thrasher. Whether we call him brownish gray or grayish brown, his plumage is so uniformly characterless in tone that it seems to change with the position of the bird. When on the ground the tone seems grayish white; when among the mesquite the hue darkens and fits in with the dull stems and

thorns. A true native of the mesquite wilderness this, sharing his thorny home with a few Western Mockers and a great many White-rumped Shrikes. Indeed the latter had the upper hand here, far outnumbering the scattering of Sparrow Hawks, the reverse of the case near the cities and railroads.

A strange little trilling song once drew our steps toward a mesquite in which several tiny birds were hopping and singing. Their little bodies were clad in dull gray, with a black band crossing through the eyes and sides of the head. In their actions and appearance were shadowed the gnatcatcher, kinglet, and chickadee, but they were none of these. Bushtits we must call them — these happening to be the Lloyd. We were able to make certain of this when we examined one which was killed and then dropped by a shrike. Their generic name bears out one of our first thoughts, for it is *Psaltriparus*, — hopping chickadee, we may translate it. They were trustful little creatures and passed close to us, trilling and searching the yellow pollen of the blossoms among the thorns.

Another bird, or flock of birds, observed the same day, which hesitatingly whispered the beginning of a little song, giving promise of a more elaborate strain later in the year, was the Brewer Sparrow, one of the most streaked of finches, at least on its upper parts.

We know that the wrens and thrashers are closely related to each other structurally, and in the North we

had often compared the House Wren with the Brown Thrasher, and wondered if Nature could possibly supply a missing link between birds so unlike. Now, a single missing link is a decidedly unscientific thing to wish for, since, if we could trace them back through the ages, the intergradations between two dissimilar creatures would doubtless be very minute, and consequently distributed through many thousands of individuals and generations. But Nature, out of her great abundance, often grants our desires when we least expect it, and here in the mesquite wilderness our missing link appeared to us. Cactus Wren the books call him, but we might with more aptness term him *Thrasher-wren*, following the precedent of Wren-tit and Quail-dove, for in appearance, if in nothing else, the bird divides the characteristics of thrasher and wren. The whitish under parts of these giant wrens are most conspicuously spotted with black, but their backs are more in harmony with their surroundings. A harsh *churr! churr!* is their only utterance, apparently an alarm note, for at times as we passed along, the mesquite fairly hummed with the sound, surrounding and accompanying us.

Even a mesquite wilderness has a boundary, and ours thins out at the edge of the great *barranca* or gorge, which slopes downward more than a thousand feet to the silver thread at the bottom, — the beginning of the Rio Grande de Santiago. It is here a

stream not more than fifty feet in width and fretted with the larger boulders of its bed. If we could follow its course, we should find it gathering to itself springs and small streams, swelling in volume until it overrides the rocks in its way, flowing swiftly and smoothly, ever descending, until the corn-stubble is left behind, over-ripe coffee-berries stain its waters, and low-bending banana leaves are rent and frayed by the touch of its power. From the uplands through temperate to tropical scenes it flows, until, after its waters have been shadowed for many miles by the great primeval forests of Tepic, it reaches and merges with the Pacific.

Along the brow of the *barranca* where we had come out upon it, the mesquite and cactus still held their own, but were overshadowed by a much larger growth, — the leafless tree morning-glories, clothed in a blaze of white convolvulus blossoms. Swarms of January insects filled the air with their humming and attracted many birds. It was here that we first met with two species of hummingbirds with which we were later to become very familiar. One, the Broad-billed Hummingbird, was wholly iridescent green, save for the throat and tail, which were blue. The Blue-crowned Hummingbird was, like the Broad-billed, a rather large species, and very conspicuous as it swung back and forth among the blossoms. Its cap of intense blue contrasted strongly with its pure white under parts and brownish green back. Although the effort was

Waite, photographer

THE BARRANCA OF THE RIO SANTIAGO

like trying to number so many flashes of sunlight, we counted, around one tree, at least thirty of this species. Strange to say, there was little or no fighting among themselves, but when a big blundering bee or wasp approached, a half-dozen hummers would rush headlong at the intruder and hustle it off.

Among these flowering trees, a small stream wound its way for a long distance before reaching the brink of the great gorge, and its edges blossomed in beautiful contrast to the arid bare earth a little beyond on each side; solid banks of ladies' paint-brush, soft and white-topped; lantanas straggling along the rim of the dust; and, closer to the water, dahlias and petunias — all wild — were budding in profusion, promising soon a great glory of flowers.

Among this low growth a small gathering of Mexican Goldfinches searched for last year's seeds, which no winter snows had buried nor ice encased. The sides and top of the heads and the backs of these little strangers were solid black, the wings and tail were strikingly marked with white, and all the rest of the plumage was golden yellow. Unlike our goldfinch of the Northeast, this Mexican scorns to assume the dull garb of his spouse during the winter months, and we could hardly blame him when we saw the orange, blue, scarlet, and yellow blossoms among which he spends this season of rest from nest-building and domestic cares.

The few butterflies surprised us by their resem-

blance to those with which we were familiar in field and meadow at home. *Archippus* was surely here, and our identical *Vanessa antiopa*. What a world of difference one's personal point of view makes! A Mexican in New York State would exclaim with wonder that the *mariposas* of Mexico had strayed to so distant a land.

The Pileolated Warbler and the Western Gnatcatcher were two small friends which we first met at the edge of the *barranca*. They were cheerful little bodies, forever busy searching leaves and twigs and flowers for tiny insects. Perhaps to this unflagging activity was due the fact that they seemed able to find a substantial living in all sorts and conditions of places. The Pileolated Warbler — so like our Wilson Blackcap, but of a brighter yellow — never became common, and yet in every list of birds we made, whether of upland, marsh, cactus desert, *barranca*, or tropical jungle, he was sure to have a place. He was not particular as to his winter home, but found everywhere enough to keep his black-crowned little head busy picking and picking, interpolating a sharp *chip!* now and then, between mouthfuls.

But his co-sojourner, the Western Gnatcatcher, four inches or so of bluish gray and white energy, was many times more numerous, and, if possible, even more cosmopolitan. The characteristic *tyang! tyang! ysss!* which they first twanged for us in the mesquite, found an echo wherever we rode or camped, from tableland

to ocean. The tail was the most prominent feature of this little personality, black, bordered with white, very long in proportion to its body, and forever flirted from side to side. The gnatcatchers stood between the hummingbirds and the larger feathered kindred in the matter of fearlessness, and while never showing the almost insect-like lack of fear of the *chuparosas*, yet they were often willing to trust themselves within two or three feet of our tents and persons.

We found numbers of last year's nests of the Sinaloa Wren, the owners of which were about, but very wary and shy. The nests were well-made structures of twigs and fine grass, globular in shape, with a small round opening in one side. They were conspicuous, but safely lodged among the impenetrable thorny acacias. Although these nests were so elaborately roofed over, the wasps' nests which we found were entirely open, often consisting solely of a single layer of comb built out horizontally from a twig. One such comb had been constructed within six inches of the entrance to the nest of a wren.

A tiny bit of broken shell matted into the bottom of one of these nests was the only zoölogical find which marked our winter's trip.

It was at the very edge of this little nameless stream that we came upon a strange sight — a drowned Burrowing Owl at the mouth of its tunnel. What perversion of instinct or faulty experience ever led it to

scratch out its burrow so close to the water, and especially on the lower side? Perhaps while still at work the rush of water through the walls overwhelmed the little tunneller, certainly but a few minutes before we discovered it, as its body was still warm, and no vulture had yet spied it. Strange coincidence of two unusual tragedies to befall creatures of the wild — a Lincoln

NESTS OF WASPS AND SINALOA WREN

Sparrow not ten feet away lay ruffled and torn in the centre of a tiny thorn weed, where it had in some way become entangled, and its succeeding struggles only bound it the tighter. The vanguard of the million ants which soon would overrun the little ball of bedraggled feathers was already on the scene with antennæ playing eagerly, while a few couriers were speeding nestward at topmost speed to spread the news.

As we approached the little gorge which the falling stream had carved for itself down the side of the great *barranca*, several Wilson Snipe sprang up, with a harsh note, from the dense undergrowth of watercress, and zigzagged out of sight. They had been feeding on the small snails and worms in the brook-bed. If their fare was as toothsome and tender as we found the cress, their hesitation in taking to wing was not without reason. The water-loving plants were here as large as lettuce and yet most delicate.

It was late afternoon as we seated ourselves on the brow of the great chasm and watched the shadow creep slowly up toward us, first darkening the semi-tropical undergrowth near the bottom. Slowly but surely it came, dulling the boulders and flowing like a phantom tide of darkness along the ancient lines of beaches which for age upon age have watched the silver stream at the bottom cutting its way ever deeper, leaving their wave-worn nakedness ever farther upward.

Suddenly over our heads and on each side poured

a living stream of birds, — Mourning Doves, — perhaps already restless with the first hints of the drawing northward, or this might have been their regular evening gathering. They came by dozens and scores from far and near in the mesquite, stopping a moment to dip their bills, dove-fashion, deep in the clear waters of the brook, and drinking long and thirstily, then hurling themselves over the *barranca* wall to some roosting-place, far below the surface of the tableland.

And now as the sun's disk silhouettes the upraised arms of an organ cactus on the opposite summit, scattered squads of another army of birds appear and focus to their nightly rendezvous — the White-necked Ravens of the whole world seem to be passing, so great are their numbers. As far as the eye can see, each side of the canyon gives up its complement of black forms; one straggling ahead uttering now and then a deep, hoarse-voiced croak. From all the neighbouring country they pour in, passing low before us, one and all disappearing in the black depths of a narrow, boulder-framed gorge. A raven comes circling down from above and instantly draws our eye to what we have not noticed before, a vast black cloud of the birds soaring above the *barranca* with all the grace of flight of vultures. The cloud descends, draws in upon itself, and, becoming funnel-shaped, sifts slowly through the twilight into the gorge where the great brotherhood of ravens is united and at rest.

THE MESQUITE WILDERNESS

When the first whispers of the night-sounds rise from the heart of the *barranca* there is nothing to hint of the thousands of sleeping feathered forms which have intrusted themselves to the shelter of the mighty depths of Mother Earth.

THE MESQUITE WILDERNESS

CHAPTER VI

THE MARSHES OF CHAPALA

OUR visit to the oasis of *Agua Azul* was one of many delights, but when the marvel of the bird-life of Lake Chapala and its marshes revealed itself to us, the feelings we experienced cannot be put into words; such one feels at a first glance through a great telescope, or perhaps when one gazes in wonder upon the distant earth from a balloon. At these times, one is for an instant outside of his petty personality and a part of, a realizer of, the cosmos. Here on these waters and marshes we saw, not individuals or flocks, but a *world* of birds! Never before had a realization of the untold solid bulk in numbers of the birds of our continent been impressed so vividly upon us. And the marvel of it all was the more impressive because of its unexpectedness.

A hot, breathless day found our little cavalcade passing the picturesque old cathedral of La Barca, our horses' hoofs stirring up a cloud of the omnipresent adobe dust. A New England housewife who spends her life in banishing dust from her home could exist in the houses of Mexicans only in a state of insanity.

LA BARCA CATHEDRAL, FROM OUR HOTEL WINDOW

The unfinished adobe walls being nothing but dust in a slightly hardened state, the least touch inside or out removes a film of the earth powder.

We were surprised to see numerous Barn and White-bellied Swallows about the streets, and our first thought was, when will these old friends of ours start on their northward journey? A natural inquiry, but one which we occasionally discovered was wholly unwarranted. For instance, I watched a Barn Swallow swoop across our path, and idly wondered where the summer would find him. I was answered, albeit rather taken aback,

by observing that *his* migration, at least, was ended about five feet farther to the north, where he alighted on a ledge of an adobe building and busied himself

Scott, photographer

NATIVE SAIL-BOAT ON LAKE CHAPALA

with a mass of straws, feathers, and mud, — the foundation of his nest!

It is hard to realize that this country, so distant, so strange, shares a bird so typical of our Northern fields as the Barn Swallow. When we find the birds at home among the adobe buildings, something is changed in our feeling toward these little feathered creatures, — they seem less like personal friends; we realize that, after all, the familiar nest in the hay-loft may be

duplicated in the streets of some tropical city. We crossed a stream by a rickety wooden bridge, and learned that its waters were the same as those flowing at the bottom of the *barranca*, crossing the mesquite wilderness. Here we were near the source of the Rio Santiago, where it flows from Lake Chapala. At one side was moored the little stern-wheeler which every other day carries a few passengers down to the lake and through its entire length of fifty miles to the several hotels at the western end.

Along the muddy shallows of the lake can be found numbers of quaint relics of a by-gone race of people. Strange dishes and three-legged bowls, sinkers and buttons, charms and amulets, objects of unknown use, and now and then little smiling idols of stone, whose cheerful expression, perhaps, gave hope to earnest worshippers hundreds of years before the first Spanish priest placed foot upon the shores of the New World.

One should spend a month upon the waters of the little river and the mighty lake, learning the secrets of the wild life. What things the giant catfish could reveal, feeling their way among the reed and lily stems! At the great marsh, where the stream flows from the lake, many ebony rattlesnakes lived a semi-aquatic life, slipping, when disturbed, from the damp mounds, and undulating through the black water, like the moccasins in a Florida cypress swamp.

From their sinewy folds of death to the beauty and grace of a snow-white egret is, indeed, an extreme; but here snake and bird lived in close association, — finding in the same swamp rest, shelter, and food. We in the North have neglected the egrets until well-nigh the last survivor has been murdered; but here in this wild place, where, outside of the towns, a man's best law and safeguard is in his holster, these birds have already found champions. Short tolerance had the first plume-hunter — an American — who began his nefarious work in the Chapala marshes. The rough but beauty-loving *caballeros* who owned the *haciendas* surrounding the lake talked it over, formed — to all intents and purposes — an Audubon Society, ran the millinery agent off, and forbade the shooting of these birds. There was no fine or imprisonment for shooting egrets, — only a widespread verbal "revolver law," more significant and potent than many of our inscribed legislative enactments.

Loons and grebes delighted in the swampy end of the lake — the former shrieking and diving in the joyous abandon of their wild, unhunted lives. The great Western Grebe was especially interesting, — another species which must fight for very existence in its Northern haunts, its silky breast having found fatal favour in the eyes of milliners.

Hundreds of White Pelicans are said to make their winter home here, breeding far to the northward; but

Scott, photographer

PALM-LOG RAFT AND FERRY NEAR CHAPALA OVER THE RIO SANTIAGO

a distant glimpse of a few of the great birds is all that may be hoped for in a flying visit.

To-day our horses were headed for the flooded marshes east of the lake, and, leaving the stream with its green borders, we rode on through the chaparral thickets, Brown Towhees and Curve-billed Thrashers springing up at every step. Beyond a distant line of willows, our guide promised us "*muchos pajaros de agua*," but there was no hint of changing conditions until we left La Barca far behind.

Few hunters thought of looking for sport elsewhere than on the waters of the lake itself, and so we were not surprised to find the birds tame and unconcerned at our presence. Little streams appeared, with coots and handsome little Scaup Ducks floating on their quiet surface, and sandpipers teetering along the muddy banks. At last we leaped two ditches, the guide leading the way through an opening in the willow tangle, and we found ourselves at the edge of the marshes, a vast plain, half dry, half flooded, broken here and there by patches of tall reeds, a great land expanse stretching mile upon mile to the lake toward the southwest and to the barren mountains rising hazy and blue in the east.

At another time and place we have seen thousands of pelicans close together on a tiny islet; again, ducks have surrounded us in such masses that we seemed floating in a sea of birds; but all our remembrances

paled before the avifauna of the Chapala marshes. Migration had already begun, and we were told that vast numbers of Pintails and Widgeons had left for the North, but untold thousands of birds were before us. As far as the eye could see, living feathered forms were scattered irregularly or massed in dense flocks. Our guide could not understand why we did not wish to shoot, but only to look, and look again, wishing we could draw out the seconds to minutes, the minutes to hours, in which to feast our eyes upon the wonderfully beautiful sight. Leaning low down on our horses' necks and flattening ourselves as close to the animals' sides as possible, we advanced at a slow walk, now and then allowing them to take a mouthful of grass. In this way we were able to approach closely, even among the flocks, without alarming the birds.

The air was filled with a multitude of sweet notes, — half strange, half familiar, — and the sight of scores of brilliant yellow breasts, crescent marked, turned toward us, told us that it was a hint of well-known Meadowlark music which puzzled our memory. But this melody was very unlike the sharp, steel tones which ring so true across the frost-gemmed fields of our Northland in early spring. The larks looked very little different from our Northern birds; their backs perhaps darker and their breasts of a warmer, more orange yellow. This genial, tropical air has thawed

their voices and softened their tones, and the sweetest of choruses came from the throats of these Mexican Meadowlarks. We passed hundreds upon hundreds of blackbirds, evenly divided between golden-headed

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beauties and others whose trim ebony forms were richly marked with scarlet and white shoulders — the Bicoloured Blackbirds. Their clucks were continuous, as they walked and hopped about, searching and

finding. The half-sodden meadows must indeed have been a limitless storehouse for insects and seeds, since they afforded food for so great a number of birds.

So absorbed was I in watching the various species, that I forgot the exigencies of my unusual position on the horse and, losing my hold, I dropped ignominiously into a puddle. A roar of wings sounded in my ears as I gained my feet, and a swift look around showed a myriad of forms in hurried flight — all blackbirds however; not a Meadowlark, had flown, but like magic, at the first suspicion of danger, every yellow breast had disappeared. The glass revealed skulking gray and mottled forms stalking stealthily among the reeds, but the naked eye refused to distinguish them from the vegetation. No glint of yellow betrayed them; in the flash of an eye a hundred brilliant-hued, vocal creatures within a few square yards of us had turned about and — vanished, many times safer than the fleeing blackbirds, a shot among which would have slain half a hundred. But from us all were safe, and after I resumed my Mexican stalking position and rode on, the alarm ceased almost immediately. The flocks of Yellowheads and Red-wings settled many ranks deep among the reeds, and one by one, like the stars in early evening, the breasts of the reassured larks flashed out, and again their melody rang sweet and full as before.

Three times a beautiful hawk, with under parts and tail of white, swung out over us from the willow which we had left, uttering low, wheedling cries and peering down at us, treading the air overhead with vibrating wings. A narrow bar of black stretched across the wide-spread tail-feathers, and we knew that we had seen the Sennett White-tailed Hawk. Oddly enough, the birds in the marshes, large and small, showed absolutely no fear, paying not the slightest attention to the presence or to the cries of the bird of prey.

We now came to occasional swampy places with small patches of open water surrounded by higher ground. Blackbirds, and Cowbirds with red eyes, chased grasshoppers and other insects. When an occasional hopper of unusually large size sprang up, a fluttering mass of feathers, scarlet, white, golden, and black would set upon him. But often a low-browed Caracara galloped up, scattering the lesser birds and appropriating the remains of the insect for himself. It was amusing to see how these curious birds seized their small prey in the talons of one foot and lifted it toward their beak, nibbling at it from between their toes, like a cockatoo with a piece of bread.

All these scenes were noted within a few minutes, and then our attention was wholly absorbed by the wading and water-birds. We rode acre after acre with Killdeer and one or two unnamable species of plover

calling and dabbling for food in the moist places close to our horses' feet. Greater Yellow-legs and their miniature copies — the Lesser — waded in the flooded areas. The beauties of all the long-legged waders — the Black-necked Stilts — were here in great numbers. In one small swamp meadow I counted more than eighty, and in all directions their striking black and white forms were visible, raised above the level of the reeds. With all their great length of legs they were graceful walkers, their movements having an easy swing which was most pleasing. From their little round heads with the long, slender, needle-like bills, the bright jet-black eyes kept sharp watch upon us, but they showed no fear unless we approached within a few yards, when they glided evenly but quickly to one side.

The Long-billed Curlews were more wary, and their complaining cries as they took to wing caused the Great Blue Herons and the Reddish Egrets to strain their necks upward suspiciously. These birds were conspicuous a long way off; one could easily count half a hundred herons within a hundred yards of our horses, but not so the ducks. A few dozen yards away there would be visible an indistinct, moving mass of many bobbing, mottled forms. As we approached we distinguished coots, white of bill and heavy-footed; Mallard Ducks, with their iridescent green heads and white necklaces; Gadwalls, with beautiful marbled

breasts, glistening as the drops of water rolled from them ; while Scaup, Shovellers, Pintails, Blue-winged and Cinnamon Teal were everywhere. When we actually rode into a pool full of these birds, they scrambled or splattered a few yards away into the next swampy place.

Then the wonder of the White-faced Glossy Ibis ! Not one flock of fifty, nor two, nor five, but dozens ; now searching every leaf and reed along a solid front of birds ten yards wide, now springing into the air and curving unexpectedly back to the ground again. They alone would have made the marshes a place of birds.

Surprises kept drawing us on and on, although the shadows of the horses darkened the ground many lengths ahead. Four Canvas-back Ducks sprang out of a ditch overhung with turf, and hummed through the air like bullets; two tiny grebes left their wake on the water for fifty feet before they could acquire impetus enough to rise. But we were told that the best vista of all was still ahead, so, sitting upright, we put our horses at a gallop, sending up ibises, ducks, bitterns, stilts, and herons, as the bow of a ship throws the spray ahead of her.

The guide pulled up suddenly and pointed ahead, and we saw a misty, dun-coloured cloud slowly disentangling itself from the marsh. The glass showed untold numbers of White-fronted Geese drifting slowly

off toward the lake. To the left were what appeared like great patches of white sand or snow, and we galloped our horses toward these. Soon the patches enlarged, changed their relative positions, and began to ascend, and we realized that we were looking at enormous flocks of Snow Geese taking to wing, — one of the most beautiful sights in the world of birds. Reluctantly we turned backward by a new route — a short cut to the town.

But Chapala honours us with a final farewell. The sun is sinking in a cloudless sky, a wind rises from somewhere, ruffles the face of the pools and brings the scent of the marsh blooms to us. A small flock of White-fronted Geese passes rapidly overhead, not very high up, when all at once there floats into view cloud after cloud of purest white, stained on one edge by the gold of the setting sun. We dismount and look up until our bodies ache, and still they come, silently driving into the darkening north. The great imperative call of the year has sounded; the drawing which brooks no refusal.

Our letters from the North tell of snow and blizzards — the most terrible winter for many years. No hint of spring has yet been felt there, while here in the tropics no frost or snow has come through the winter, food is abundant, hunters few; yet a summons has pulsed through the finer arteries of Nature, intangible to us, omnipotent to the birds. Until dark, and no

one can tell how long after, the Snow Geese of Labrador, of Hudson Bay, of Greenland, of Alaska, perhaps of lands still unknown, speed northward.

WHITE-FRONTED AND SNOW GEESE, CAPTIVE WILD BIRDS

CHAPTER VII

CAMPING IN A BARRANCA

EVERY excursion or ride we took through mesquite or desert, or to the wonderful marshes, revealed new mysteries; we had hardly entered the threshold of Nature's wonder-house, but each evening the setting sun called to us as strongly as ever it did to Magellan or Cortez, and before long the summons became imperative. Then, discarding all luxuries, we girded on khaki and corduroy, cartridge-belt and revolver, and slinging our cameras over our shoulders, we boarded the train which would carry us to the end of civilization. The six hours' run from Guadalajara to Tuxpan, on the Mexican Central Railroad, passed quickly, for the country was pleasantly diversified. Stretches of alkali desert give place to green oases dotted with 'dobe houses; sun-baked maize-fields and tangles of cactus alternate with plantations green and restful to the eye. Such the foreground, always level, while at a distance, in all directions, low mountains rise in graceful lines, with softly curving, ancient lava-flows showing gray and barren.

Wherever a marsh appeared, dark and green, there, as usual, feathered hosts were gathered. My journal

shows notes of species again and again repeated, the impression which each new assemblage made being so vivid and unexpected. The train once passed slowly over a low, rough bridge thrown across a marsh, and in an adjoining pool we noted the following birds, most of the species represented by scores of individuals, the surface of the water and the shore literally covered with them; Coots, Mexican Cormorants, Lesser Scaup and Mallard Ducks, Shovellers and Blue-winged Teal, two species of Grebes, Gallinules, Jacanas, Green Herons, Great Blue Herons, Black-necked Stilts, Glossy Ibises, and American Egrets! Fifteen splendid species of water and wading-birds feeding together in apparent harmony, with a fearlessness of man which it would be hard to find within the boundaries of our own Republic.

At last in the far distance there loomed a tall jagged peak flecked with snow, and we were told that we were looking at the snow mountain of mighty Colima, at present hiding her sister of fire. As we backed swiftly down into the terminal station at Tuxpan, the conductor chanced to see a pile of stones which some playful (?) Mexican had piled upon the track, and the air-brakes stopped us just in the nick of time. Such pranks (!) are not uncommon, it is said.

Tuxpan will remain long in our memories of pleasant places in Mexico. Our hostesses of the Hotel Central were kindness itself, perhaps because *la Señorita Americana* seemed to them the personification of femi-

nine delicacy. "What!" they exclaimed. "*La Señorita* is going on into the wild *barrancas? Dios mio!* Impossible! Think of the hard trail, the fierce *tigres*, the bandits! Only yesterday a traveller and his *mozo* were held up and robbed of six hundred *pesos!*" And so on, but to no purpose. *La Señorita* was more resolved than ever, having come thus far, to yield to the fascination of the volcano, which drew like a lodestone; and indeed we knew the dangers were exaggerated by these good people — these women who live but the hundredth part of the life of an American girl.

The hotel was clean and neat, the *patio* shaded by masses of oranges and lemons, while tame deer, parrots, *burros*, dogs, cats, and doves occasionally wandered past our door, or stopped to regard us with wondering eyes.

We sent for a *vaquero* guide and arranged for horses and a pack-train. "*Está muy bien, Señorita,*" was his commendation when he learned that she desired a man's saddle. The Mexican women always use a most cumbrous kind of side-saddle, carrying two saddles — one facing left and one right, that they may, when cramped, change their positions; — most uncomfortable for the occupant and dangerous and painful for the animal on these steep and rocky trails. *Señorita* gained the guide's devotion and complete admiration when he, idly suggesting a comparison of revolvers, saw that her weapon, far from being a toy, was better

Scott, photographer

PLAZA AT TUXPAN

than his own. Two mules were to be loaded with our tents, cots, provisions, and other baggage, and we prepared to start at daybreak for the wildest *barranca* on the edge of the tableland. Our plan was to camp there for a time, then to move to a lower altitude, and at last to pitch our tents in the tropical lowlands beyond the city of Colima. Thus we need never be out of sight of the ever more wonderful volcano, and yet, by encircling it with a line of camps, we might see some of the wild Mexican life under many conditions and at varying altitudes.

At sunset, from an ancient well-curb in the centre of the *plaza*, we watched the smoke curling slowly upward from the fire mountain, silhouetted against the splendour of the western sky. Our hostesses passed us silently, on their way to the picturesque cathedral; they must pray to-night for the soul of a beloved aunt whom they believed to be still in Purgatory; and soon the bell ceased to toll, and the low tones of an organ were heard, softened and mellowed by the same hand of time which had weathered the gray, lichened walls.

During the last hour of light, half-clothed young boys rushed back and forth, vainly trying to fly a home-made kite, with no wind to lift it. We asked one of them what he thought of the smoking mountain, and his face sobered for a moment as he crossed himself. "*Dios mio!*" came the universal exclamation, "the priests tell us (and they know), the little *diablos*

TUXPAN CATHEDRAL

del monte (devils of the mountain) will roar out at us and carry us down with them if we are not good." A moment later and he was helping his band of dusky *muchachos* to round up some unruly calves which had appeared from somewhere.

The cathedral's bell is soft and sweet; the thought of the Catholic legends brings the mediæval past into vivid reality; Colima's snow peak gleams with the last rays of the sun, long since hidden from us; but all this is put out of mind or at least subordinated to indistinctness in our revery, when the taller

apex of black pines and lava is warmed by a dull glow, which fitfully rises and falls — the very pulse of Mother Earth. Here is the mystery of the cosmos; our first glimpse of earth's primeval fires which have glowed since the first cell came into existence — and who knows how many ages before? One may read of strange customs, and at once see them clearly in his mind's eye; of grand mountains, and imagine their appearance and impressiveness; but of an active volcano — never! The awe, the deep reverence it arouses is part of one's deepest nature, beyond words or expression. It is late that night — and many other nights — before *Señorita* and I interrupt our revery.

The Mexican guide was tardy next morning, — two hours by our watches, — but according to his notion only a little, "*ahorita*," — a very little, — behind time. A silver *peso* bought a large assortment of the most primitive earthen *ollas*, jars and saucers, and several plaited straw mats, all of which we found invaluable later on. When these were tied on above the packs, we said good-bye to our hostesses; and our little cavalcade clattered off through the deserted streets, past the station, the railroad terminus, and the little wayside shrine which always marks the completion of any considerable undertaking in this country.

For mile after mile we rode along a level, dusty trail, zigzagging through parched mesquite bushes, from which a short gallop to one side frightened out Curve-

billed Thrashers and Mockingbirds and occasionally a White-rumped Shrike. All three species, when unmolested, flew to the ground and fed greedily on a kind of black ant which covered the earth in great hordes in certain sharply defined areas. This seemed an unusual habit of the shrikes, which are generally strictly arboreal. Winding through deep crevices worn through old lava flows, we came at last to the edge of the *Barranca Atenquiqui* (Atĕnkē′kē), and the view before us banished all the disappointment which the barrenness of the desert behind us had aroused. The deep gorge at our feet is bright and green, and at the bottom the dense semi-tropical foliage almost conceals the white-rippled stream which rushes along. A turn in the *barranca*, some little distance to the right, frames the volcano squarely between the two walls, and from the gorge to the edge of the gray, impassable, live lava, extends a verdant "Promised Land," to roam through which we were as eager as were the horses for the cool stream below.

This side of the *barranca*, however, is steep and rocky, and the way to the bottom is treacherous and slow. The sure-footed mules felt their way at each step, and we leaned far back against the rear pommel of the great saddles, the shoulders of the horses working laboriously, the animals hanging back in the steep places. With a final reckless rush we tore down the last slope, shouting out in English and Spanish with

the joy of the journey's end, nor did we pull rein until our steeds were deep in the stream-bed.

There seemed no place to camp, except here almost on the very line of travel along the trail, or to go farther on, neither of which things we desired. So we

OUR PACK-TRAIN

drove the pack-animals upstream and, urging our horses after them, half swam, half waded around the nearest bend. Here, sheltered from all intrusion, we found a level piece of good ground where the *barranca* stream halts its rapid flow and for a few yards widens out into a broad, deep pool bordered with sand-bars. The hitches were loosened and our packs were taken off

the mules. Our guide stampeded his lightened caravan back to the trail, shouting a long-drawn "*Adios*" as he disappeared, and we were left alone.

Our tents were soon pitched, and Ricardo, our clever little Mexican cook and general *aide-de-camp*, had the supper prepared before the short twilight fell. It was long after our little camp settled to rest that I finished arranging the thousand and one things which a naturalist needs in a country where birds, insects, and flowers are as strange to him as if but newly created. I walked quietly to where the slowly moving water sent back the clear moonlight from its surface, and suddenly the daring of our expedition came fully upon me. Behind me the tent shone white through the trees, so wee a mark of human presence deep in the maw of the wild *barranca*. A strong enough quake of earth, and the boulders silhouetted high above against the sky might loosen and slip from their moorings; a greater bubbling of water from the mountain springs, and the stream would blot us out; and yet we have left dangers as great in the civilization from which we have fled for a season; all the risks of train and steamer, of disease and fire, from which here we were free. But what of fierce men and animals? As a matter of fact, I was then far from being a good shot with a revolver, but at that moment the feeling of the rough little handle against my hip was infinitely comforting.

A deep groaning — deeper than the lowest bass of

any organ — came to my ear, then changed to a louder rumble, and then to a muffled booming, and I knew the volcano was speaking. How far underground it worked or what forces were contending together, would be perhaps forever a mystery, but the realization of such mighty powers at work so near, far from arousing alarm, seemed to quell all fear, and without another disturbing thought I picked my way back to the tent. The sleep which came to us that night was of the quality of sweetness known only to those whose happiest days and nights are the ones spent closest to the heart of wild Nature.

SANDPIPERS AND HAWKS

At daybreak a plunge into the clear, cold stream refreshed every sense, and the life of the canyon began another day. For us, its birds and trees were created yesterday, but the rocks which fringe its summit have seen them come and go for centuries. We appeared thus suddenly and fitted into the environment as if always a part of it, disturbing nothing that we could avoid, shooting little except for food, and even that with low-sounding guns whose reports brought no alarm to the tenants of the *barranca*. And thus here as elsewhere we strove to merge as nearly as possible into our surroundings, and by means of neutral tinted clothes and quiet watching, to see into the real lives of the creatures of this Mexican wilderness.

Most of our hunting was done with cameras and glasses, and this kind of sport proved fully as exciting and required infinitely more skill than the simple levelling of a gun.

We had not long to wait; the birds came thick and fast; the insects whirred by our tent; lizards rustled among the leaves. Indeed, for a time we hardly took notice of any details, so disconcerting were the impressions of constantly appearing forms, new and strange.

The sand-bars in front of our camp were seldom untenanted for more than an hour by one or two species of birds — both old friends. The first note to greet us came from one of these sand-spits, *Kill-dee! Kill-dee!* and there a pair of beautiful Killdeer Plovers stood watching us, their belted breasts of black and white bobbing cheerfully, bringing to mind the mud-flats of Fundy, the dry uplands of Virginia. Where indeed do not the notes of this handsome bird penetrate? Here from late January on, the Killdeers were moving restlessly downstream, passing slowly day after day in pairs or small flocks. At first we thought the same individuals reappeared each day, but when occasionally our larder ran short and we shot a half-dozen, the following day Killdeers in equal numbers were running about. This slow migration, or at least very regular wandering, is shared by another species — the Solitary Sandpipers; little waders not wisely named, at least in this land, for wherever we saw them they

appeared as fond of each other's company as the rest of their sandpiper relations. These graceful little birds were forever scurrying along the shallows, probing and probing for what, they only knew. Their whistling cry as they alighted was the signal for the Killdeers to leave. There was never any open hostility displayed between the two species, and surely there was food enough for hundreds, yet the Killdeers flew across the stream or on, out of sight, when the sandpipers appeared.

A remarkable mystery is woven about the breeding habits of the Solitary Sandpipers. In the North, during migrations, it is seldom that these sandpipers cannot be found when searched for; even during the summer they have been observed again and again. Yet so carefully do they conceal their nests and eggs, that but one or two have ever been discovered. Would that some of our rarer birds had equal skill!

These little waders certainly enjoyed their feasts of worms and "bugs," but they were exposed to many dangers along the open stream, and they had ever to keep a sharp lookout skyward for enemies. One day a small flock of Solitaries, off their guard for a moment, had a narrow escape. They were feeding quietly near camp when a Mexican Black Hawk suddenly appeared upon the scene and instantly swooped upon them. A more magnificent dash I never saw; a full-rounded aerial dive from fifty yards away, increasing to lightning speed, its focus being the group of unconscious

birds. Some instinct warned, and a despairing cry arose from the flock, as they perceived the black death almost upon them. The hawk's cruel talons were outstretched, half bent to clutch. Every gray body tumbled off the spit of sand, and disappeared beneath the surface of the water, while the hawk checked his descent with a single wing-beat which splashed the stream and then curved sharply upward to a dead tree. When the ripples passed, the little frightened 'pipers were seen speeding downstream, with heads held low, wings half raised, running along the bottom. Soon they were lost to view through the water, and yards below, where the stream shallowed to rapids, five limp forms burst forth and flew close to the surface around the turn. We were glad to see the sandpipers make their escape, such command of expedient deserving nothing less.

The hawk was joined by its mate, and both flew to a tree immediately opposite the camp, in the top of which was a rough nest of sticks. During the day these birds were away, perhaps hunting, but late in the afternoon they invariably returned, showing no fear of us or of our camp-fire. At such times they flew aimlessly about, or both birds joined in adding more sticks to their nest, close to which they roosted at night. This desultory nest-building was continued throughout our stay, but no eggs were laid. Once or twice the hawks dashed at a pile of conglomerate rock

near the tent and seized a piece of refuse meat which we had placed there. They were handsome birds, jet black throughout, save for three white bands on the tail, at base, centre, and tip, which flashed out when the feathers were spread in flight. Wherever we found this hawk in Mexico, it was sure to be near a stream, and three of their nests which we examined were in high trees overhanging the water.

We soon made the acquaintance of another Mexican bird of prey, more handsome even than the Black Hawk, and his appearance was under conditions quite as sensational as our meeting with the former species. A snapshot at a large hawk for identification only stunned the bird, and when it showed signs of recovering, a strong handkerchief was used to bind its feet firmly together. It was a splendid Mexican Goshawk. Its tail is like that of the Black species, but the beautiful wavy bars of gray and white which mark its breast and flanks are characteristic of this bird alone. Even the upper parts of the plumage show faint traces of these linings, and the head and eyes are of noble bearing — an eagle in miniature. When his faculties returned to him unimpaired, he was quiet for a while, but not from fear. His spirit was far from being broken, and, biding his time, he made a well-directed break for liberty. Away his strong wings bore him, and he bit fiercely at the white bandage as he flew.

Then a curious thing happened. A Western Red-tailed Hawk appeared and, seeing the flash of white,

MEXICAN GOSHAWK

imagined it some unwieldy booty which he might claim for his own. The war-scream of the Western representative of our "Hen-hawk" rang out, and he hurled himself upon the Goshawk. Instantly his claws sank deep into the meshes of the cloth; he became entangled,

and with clutching talons the two birds fell rapidly to earth, their frantic wing-beats thrashing vainly one against the other, impotent to support their ill-balanced bodies. Down fell the fluttering mass of ruffled feathers square into a thorn-bush, where they lay panting and fiercely glaring at one another. To complete the tableau, a third species, a Black Hawk, swooped toward the bush and hovered for a while above the helpless birds.

The incident was fraught with significance when we consider that under ordinary circumstances the Red-tail would never have dared to approach, much less attack, the smaller but fiercer Goshawk. At other camps we found the Goshawk a very tame and fearless bird, and in hunting and general hawk-character the Red-tail ranks far below him. Yet in this instance the stunning effects of the shot, or the confining bandage, instantly revealed to the Red-tail's eye that something was wrong. Taking immediate advantage of this slight showing of weakness, the less noble hawk made an attempt to rob. Thus is the high average of strength and health maintained among wild birds. Each is ever ready to oust another from a stronger showing of power; each holds his position against competitors only by the exercise of his full faculties, and woe to the weakling or to the victim of even a slight accident!

The note of the Black Hawk is a long-drawn, dominating scream, coming to the ear down through the

air at times when the bird was almost beyond the range of vision. The Goshawk's cry is a succession of clear tones, peculiarly liquid for the notes of a hawk. The principal food of the Goshawk in these *barrancas* was lizards, which it snatched up with most marvellous skill. The unfortunate saurian would see its fate coming and flash by so swiftly that to our eyes it passed as a streak of brown or green. But the hawk's judgment is exact. The lizard is swift, the hawk is swifter, and unless a thick tangle is near, into which the reptile can hurl itself, the meeting of the acute angle of its flight and the bird's descent is as certain as fate.

BIRDS OF THE DAWN

As I have said, the Black Hawks came about our camp in the afternoon and were active until late in the evening. Hours after darkness had closed down, we heard their screams as they passed overhead. But they were awake and away long before daylight, and during the whole morning small birds seemed more at their ease, owing to the absence of birds of prey. Although we were at an altitude of about 4000 feet, tropical nature was by no means absent. After the chill of nightfall had passed, birds appeared which we had long looked forward to seeing.

The beautiful little wren-sprites of the *barranca* were the first to waken and sing, and we hardly recognized in them the Mexican Canyon Wrens of the house-

tops of Guadalajara. Here they were in their native haunts, and their marvellous hymn of sweetness rang out frequently in the early morning, reëchoing among the rocky cliffs. We caught the real inspiration of the wild joyous strain, which was so obscured and fitted so ill with the environment of the dusty city. It is a silvery dropping song of eight or ten clear sweet notes, becoming more plaintive as they descend, and ending in several low, ascending trills. The silvery quality is of marvellous depth and purity, and although at times the birds sang with startling loudness from the very ridge-pole of the tent, there was not a trace of harshness or aught save a liquid clearness. It seemed the very essence of the freshness of dawn in the cool bottom of the canyon. The little singer was not easily detected in the gray light, but at last his tremulous white throat was seen high overhead at the entrance of some dripping, mossy crevice in the rocks, his tiny body and wings of dark chocolate hue merging into the background.

MEXICAN CANYON WREN

As the sunlight travelled slowly downward toward us, the notes flowed more slowly from his throat, until, with the increasing warmth, only a few sleepy tones

were heard — like the last efforts of the dying katydids at the time of the first frost. But the wren himself was far from sleepy. The heat had simply thawed the frozen music from his heart and he now began the serious work of the day. There were spiders and flies to be sought among the boulders, and the bird became a feathered mouse — creeping or running silently and swiftly over the rocks, now slipping into a crevice, whence he emerged with a half-frozen insect. A quick wipe of his bill and he jumped rather than flew to the next likely-looking place. So all day goes the tiny bundle of feathered energy, the little eyes seeing everything, the ears ever on the alert, tail erect, reflecting every emotion. *To catch a Canyon Wren asleep* would offer itself as a feat worthy of being classed with the proverbial effort to find a needle in a hay-stack. Of all the birds of the *barrancas* these wrens perhaps won our deepest affection; so tiny were they, and yet each morning filling the whole great gorge with their sweetness.

But the wrens were not the only early risers near our tents. A series of sharp explosions or clicks, as if from some large insect, or perhaps comparable to an exploding pack of very small fire-crackers, mystified us, until a tiny green and white form perched upon a stone in mid-stream, and we knew the author to be a Little Green Kingfisher. This was the term which we applied to him before learning his Latin name, some thirty let-

ters long, and his generally accepted but utterly inane and meaningless common name of Texas Kingfisher. Why, forsooth, because a few enterprising individuals of his kind have dared to cross the Rio Grande River into one of our Southern States, must we call the entire race Texan, when their natural home is in Mexico and Central America? "What 's in a name?" Verily, what is *not* in one!

The songs of but few birds, when reduced to musical notation and played upon the piano, can be recognized until the name of the songster is revealed, and so in the case of this diminutive kingfisher; no one would ever call his utterance a rattle until the little fellow — true kingfisher from beak to toe — is seen in the act. Then the resemblance of the clicking to the rattle of our Belted Kingfisher is so absurdly apparent, and yet such a parody and travesty in its diminutiveness, that we cannot help being amused. For a few days we never saw these little birds without the comparison coming to mind, but we soon discovered that far from being a mere caricature of his larger cousin of the North, the Little Green Kingfisher had an individuality of no small moment. As soon as he was convinced of our pacific intentions, he was perfectly fearless, and went about his business wasting but little thought upon us strange interlopers. Perfect drones we must have seemed to him, with nothing better to do than to stare and stare all day. He was an affectionate bird, and kept close to

his mate, who was easily distinguished from him. The hues of his plumage make him a gem in the sunlight; a few inches of glistening, iridescent green, a white throat and collar, and a broad band of bright chestnut across his breast. The female lacks this ruddy tint, but in its place has two bars of beautiful green spots. The kingfisher's wings are his chief glory, green like his back, and when they are spread in flight, a hundred round spots of white flash out, as if his last dive had strewn his wings with a myriad flecks of foam. His habits differ considerably from those of our familiar Belted Kingfisher, as when on the lookout for fish, instead of selecting an overhanging branch, he usually prefers a boulder in mid-stream, or a flat sand-bar. In the eddies behind such places small fishes collected in numbers, and the little *martin pescador*, as the Mexicans call him, seldom went hungry.

A pair alighted one day on a sand-bar among the sandpipers, waddled awkwardly to the edge, and peered intently into the water, their absurd tails perpetually jerking up and down. Suddenly, perceiving the object of his desire, one of them described a half-circle in the air and dropped with unerring aim upon a fish or polly-wog. The sandpipers ceased their probing for a moment to consider the strange manœuvres of this little companion of theirs. As I shall mention later, when water was scarce this sturdy little fellow was in no wise discomfited.

The devoted pair, whose fishing-ground was about our pool, guarded their preserve carefully, and when a third individual appeared he was hustled unceremoniously off, and hunted out of sight. A glimpse of an episode in the life of this pair of tiny kingfishers was given to me early one morning, when I was lazily swimming across the pool. A great clicking and darting about of these birds drew my attention to them, and I perceived that an unwelcome third kingfisher had appeared, a female, judging from her green-banded breast. This was no ordinary intruder, and the most vicious attacks upon her by the other female failed to drive her away. I had noticed before that when the intruder chanced to be a male bird, the male of the mated pair figured most prominently in the process of eviction.

Now the females flew at each other, clinched and fell to the sand, striking savagely with their long, pointed beaks. Having gained a firm foothold, I was able to watch every detail in this tragic scene. From the very first attack, the stranger seemed to have the best of it, and soon her superiority in strength was very apparent. Our little mated bird grew weaker until she appeared hardly able to stand upright. I began advancing through the water, intending to take a hand in vanquishing this stranger Amazon, when the male, who had been hovering and clicking excitedly near by, dashed to the unequal combatants and took

a tardy part. According to the "inexorable law" of Nature (or more correctly that of some scientists), the male kingfisher should accept the stronger bird and relinquish his vanquished mate. But deep in these *barrancas* may not a bird do as he chooses? Before I could interfere, he had driven the strange female into the air. Around and round they went, close to the surface of the water, their white-spotted wings flashing by, angry clicks filling the air. At last they disappeared, and not for three or four minutes did the valiant little bird return. His mate was unharmed, and together they flew away, and in two days they began a nest in a bank of clay some distance upstream.

The method of starting this tunnel was peculiar. The birds took turns in flying at the bank, and, balancing on fluttering wings, they made dart after dart at its surface, each stroke flicking off a small chip of clay from one particular spot. Next day, the hole had been bored to a depth of several inches, so that a firm foothold was afforded, and the laborious fluttering was no longer necessary. This same pair of kingfishers spent some of their nights in another hole — perhaps an old nest — near camp.

A third bird-voice rang out in the early mornings, unmusical and most penetrating — the call-note of the Elegant Woodpecker. Except for a circle of black feathers about the eyes, and the golden instead of red hue of the nape of the neck, he would readily pass for

a Red-bellied Woodpecker, the common bird of our South Atlantic States. These birds remain paired all through the winter, and are forever calling to each other,

ELEGANT WOODPECKER

their loud cries ringing out sharp above all other sounds. This habit, together with their conspicuous black and white backs and scarlet caps, makes them prominent figures in the avifauna of this part of Mexico. They

had no fear of hawks, but would attack a Black Hawk with as little hesitation as if he were a vulture. Not once did the Elegant Woodpecker favour us with tattoo on resonant wood. Does he mate for life and thus make less use of the methods of invitation and challenge so common among all his cousins?

We were surprised at the number of trees which had lost their leaves, fully one third presenting as bare an appearance as the deciduous trees at this time of year at home. One compensation was the flowering of many of these. Before a leaf-bud has unfolded, magnolia-like, a hundred beautiful blossoms, burst forth every day, the first ones withering and falling, but new ones giving the trees a continuous appearance of freshness. The most common of these was the Cotton Tree (*Bombax palmeri*), which the Mexicans call *clavillina*, a tree of good size, whose oblong flower-buds burst open, revealing a radiating tassel of long silky-white stamens, five or six inches in length. The petals then curve back out of sight, giving the tree the appearance of a great mass of delicate, silky floss. These trees love to grow on the very brink of the *barrancas*, their branches reaching far out over the sheer cliffs. The bark peels off in long, fluttering, red streamers, thin and transparent, and the rustling of these in the slightest breath of air is a very characteristic sound of the country.

The flowers were fragrant and attracted hosts of

small insects; these in turn drew the birds, so that the fringe of *clavillinas* above the camp was a favourite place for many species. As early as six o'clock the blossoms of these trees, because of their lofty position, flashed back the first rays of the rising sun, while we below were in shadow until two hours later. A Louisiana or Western Tanager used to perch high up among the flowers each morning, and pour forth a harsh, unmusical trill with as earnest a manner as if he thought the world was listening, charmed by the grating sounds. What a contrast to the musician of an hour before, — the Canyon Wren, — garbed in mottled hues of dark brown, singing its incomparable strain, is this tanager, brilliantly feathered in red, yellow, and black, but uttering jarring discords. The law of compensation is indeed a just one.

Orioles soon made their appearance, a flock of them, somewhat like our Baltimores, but larger and with jet black wings and tail — the Wagler Oriole. Their gaudy costume of orange and black is not acquired until the third year, and during the first two seasons, the immature birds have to be satisfied with more sombre tints of light yellow and green. These birds, too, have renounced song for their coat of many colours, and can only rattle harshly. Their alarm-note is hard and metallic, like that of a nuthatch.

The tanagers and orioles clamber over and around the stamen-blossoms, sometimes hanging by their feet

FORK-TAILED HUMMINGBIRD

as a chickadee clings to a twig. The white blossoms, the birds, — red, orange, black, and yellow, — and the blue sky beyond, formed a most beautiful sight, which, from our darkened point of view below, showed to the best advantage.

One more bird must be added to the list of those which appeared more especially in the early morning — the Fork-tailed or Golden-backed Hummingbirds. The acacias growing thickly about our camp were covered with masses of sweet-scented pea-blossoms, and here scores of these hummingbirds delighted to find their food, shooting back and forth or perching for an instant to arrange some microscopic plume. This

particular species of *chuparosa* is all of an iridescent green, save the head, which is capped with shimmering gold. Occasionally two would meet, hum and poise before each other for a fraction of time, their deeply forked tails scissoring open and shut, then launch themselves fiercely at each other and fight out their little quarrel within a foot of us as we sat at breakfast.

A GOSHAWK NEAR CAMP

CHAPTER VIII

NATURE NEAR CAMP

THE exigencies of camp life required the thinning out of the small acacias and other bushes in the immediate neighbourhood of the tents, and this bare patch of ground, far from being barren of interest, provided entertainment for hours at a time. The clearing of the ground at once attracted the leaf-cutting ants, which swarmed to the open place in myriads. We were thoroughly alarmed at first, visions of being compelled to move our outfit out to the water-encircled sand-bars being far from pleasing. But as it proved, the ants gave us not a moment of discomfort, for, by a little judicious placing of orange-peels and biscuit-crumbs in a sharply defined space, we were able to convey the idea to these hordes of insects that the daily falling of "manna" was restricted to that particular spot.

These ants were most interesting little creatures. The entrances to their homes were many yards away, and yet all day long, two unbroken lines of ants connected these holes with the new food supply; one line hurrying empty-jawed to the scene of activity, while those in the other file were returning heavily laden

with orange-peel or some bit of food. During the first few days the majority of the ants transported roughly circular pieces of leaves, but news soon spread of the more precious treasures, and only a day or two was needed for a well-marked path to be worn in the direction of each nest. There were two very distinct classes or "persons" among the ants, each hard and thorny-armoured. The workers, or those which carried the burdens, were small, the big-jawed soldiers being much larger. The latter loafed along, one to every twenty or so of the smaller kind, doing nothing in particular except occasionally brandishing their formidable mandibles. In one place an ant-trail led over an arching branch which lay upon the ground. The removal of this caused the greatest consternation. Burdens were dropped, soldiers collected rapidly at the broken ends of the trail and advanced slowly, waving their pincer-like weapons as they went. In three minutes the foremost members of each division met, twiddled antennæ, and the line of travel was once more open. The workers hastened back, searched for their discarded loads, and hurried along as before. I noticed that for ten or fifteen minutes the soldiers were more numerous at the point of the accident than elsewhere.

Some of the diminutive workers carried comparatively immense burdens, a piece of orange-pith three or four times as large as the entire body. Occasionally one would come along staggering under a tall,

wide-topped scrap of blue or white paper, taken from some food wrapping, and looking absurdly like a little banner or standard.

These prickly-skinned ants were seldom eaten by birds, but, as the heat increased toward midday, when flies and wasps appeared, birds quickly gathered. The tiny Western Gnatcatchers were ever twanging their little vocal cords, and they were perhaps the most numerous small birds hereabouts, but up on the higher ground along the *barranca* top, Audubon Warblers excelled in numbers. Associating with the gnatcatchers, though not so numerous, were Yellow-bellied Vireos — a new acquaintance. They have the habits of fly-catching warblers rather than of vireos, and they were constantly about the camp, snapping up tiny flies and gnats, and uttering their sharp *chit! chit!* The colouring of these birds is rather characterless, being yellowish green above and greenish yellow below, but they are bright, vivacious little creatures.

Occasionally in the mornings, numbers of tiny grayish warblers came slowly down the walls of the *barranca*, feeding as they descended, taking short flights, and keeping close to the ground among the dense underbrush. These birds lingered at the camp for a time, and then, with soft, low chirps, all passed on to the water, where they alighted on the sand and drank. Then, as if at some silent signal, all flew up and returned quickly, still keeping close to the ground, zig-

zagging their way upward in a long line, like tiny gray mice. They remind one somewhat of Nashville Warblers, and indeed they are a closely related species — the Virginia or Rocky Mountain Warbler. The second common name indicates its summer home, and here in the mountains of Mexico, it is said to be near its southern limit of migration. Yet it was a very common bird. There was much variation in the amount of yellow on the under parts, some birds showing much more than others.

In this Barranca Atenquiqui we soon made the acquaintance of the Derby Flycatcher — one of the most characteristic and at the same time one of the noisiest birds of Mexico, screaming and calling all through the day. It was winter, and insects, while fairly abundant, were apparently too scarce to provide the flycatchers with their usual diet, and we found them feeding freely on berries and seeds. These Derbies added much to the colour and life of the *barranca*, often flying past on their way up or down stream. They are large and powerful birds, more than ten inches in length and strikingly marked. The throat is white, while the rest of

DERBY FLYCATCHER

the under parts is bright sulphur yellow; the back is brownish, and the large head is marked with black and white, with a crown of bright yellow and orange. At this place we had no opportunity of studying them at close range, but I mention the bird because of a peculiar habit which one individual displayed, namely, the art of fishing. This particular Derby was the only one of its species which frequented our camp, and here the solitary bird spent much of each morning, unmolested by the kingfishers, and all but equalling them in their own trade. Like the kingfishers, the Derby perched upon a rock and watched the eddies, and then dived with all his might two or three times in succession, each time securing a small fish, or sometimes a tadpole. It seemed impossible for him to immerse himself more than three consecutive times, for his plumage became water-soaked, and he then flew heavily to a sun-lit branch to spread himself to the sun. After drying he was at it again. It would be interesting to know if, when a bird of such unusual habits mates and raises a brood of young, this knowledge would in any way be imparted to its offspring.

Everywhere in the cliffs above us were caves, some large, and many small, and toward evening, or in fact at any time, by careful watching, the tenants of these rocky shelters might be detected. Immediately about camp four or five species of lizards were common, all small — from two to six inches in length. These liz-

ards lived among the crevices of the rocks some distance away from the water, and their whole time seemed to be spent in creeping stealthily to where they might lie in the open upon the hot sand, and in rushing helter-skelter back to their holes, at the slightest hint of danger. They were victims of an inordinate curiosity, and whenever we were quiet for ten minutes or longer, a sly glance behind would reveal a score of bright little eyes watching our every motion. Start up suddenly, and the tumult was laughable. Rustling and scurrying the little brown forms would go, only to creep back again when all was quiet. Sometimes we cornered one near the water, but he would never plunge in. Rather than wet himself he would take the greatest risks of slipping through our fingers. It was amusing to see them, when running, gradually assume an upright position and a bipedal locomotion as their speed accelerated. The greater the momentum the less use were their fore legs. When they were moving most rapidly on their hind legs alone, even the tail trailed straight out behind, giving no support whatever.

Once or twice, as we came along the Colima trail, we had noticed the black forms of huge Iguanas, as they dived into their holes under the banks of earth by the roadside. But here we found them at home, looking like pieces of decayed wood among the rocky caves. A large species of green lizard was very rare, and only twice did we catch sight of his two feet or more of

body and tail lying, like a gigantic emerald, outstretched upon a stone. But the Iguanas (*Ctenosaura acanthura*) are common, from small ones a foot long to great fellows forty-five to fifty inches in length. Their scales are of a dark hue and mottled, especially over the back and neck, with flesh-colour. Along the neck and the back is a ridge of tooth-like spines which gives the creature an exceedingly fierce appearance. The habits of the Iguanas are most interesting; they appear to be strictly diurnal, and the hotter the sun the more they enjoy basking in it. Not until the cool of early morning had passed did they appear, crawling slowly out of their gloomy caverns to the highest point of rock near by, and, holding themselves as high as their short legs would permit, they looked carefully around in all directions. It takes little imagination to magnify the stone upon which an Iguana is resting into a huge boulder, and the lizard to a measure of feet instead of as many inches, — and the world has slipped back two, four, six millions of years, and the Ceratosaurus of the Jurassic Age is before us.

The Iguana is apparently soon satisfied that everything is as it was the day before, and it slowly settles down, sprawling flat upon the stone, of which, to all intents and purposes, it becomes a part. The keenest eye fails to differentiate rock and lizard, so exactly does the mottling of the creature's scales harmonize with the weathered and lichened surface of the stone.

But nothing ever escapes the gaze of the black spirits of the *barranca*, and soon a vulture swoops close, craning its neck and leering at the lizard to see if

IGUANA

perchance its ally, Death, has not passed here and provided a repast. In an instant the lizard is up full height, and with mouth wide open it sways from side to side, then throws its head up and down, snapping

at the upward fling. A most remarkable performance it is and well calculated to impress an enemy with the formidable character of the creature. In reality the Iguana is singularly defenceless, and these terrifying actions are pure "bluff." The upcurved pinions of the vulture swing outward, and the bird floats evenly across the abyss to the opposite cliff. The Iguana seems to realize the harmless nature of the bird of carrion since, at the approach of a hawk, the reptile turns and scrambles, with all speed, headlong into its hole.

When the midday heat had driven most creatures to shade or hole, the Iguanas slept peacefully on the heated rocks. They feed on almost any kind of vegetable food, — roots, bark, or leaves. We found the flesh of these creatures delicious. "*Dios mio! Esta es veneno!*" exclaimed our Mexican when we brought in a large Iguana and asked that it be cooked for supper. We explained that it was *not* poison, and in fact we found it sweet and delicate, the meat being as tender and white as chicken, and very similar in taste to frogs' legs. After that the Iguana appeared as a regular item on our bill of fare. These great lizards are said to grow to a length of six feet, but all which we saw were under five. Their eggs are long and yellowish white in colour. They lay about fifty during the early spring.

Immediately opposite our camp was a large, irregu-

lar-mouthed cave, high up on the face of the cliff, which we discovered was tenanted by a remarkable assemblage of living creatures, putting to shame even the mythical "happy families" of the prairie-dog burrows of our Western States. Each morning a pair of Mexican Canyon Wrens flew out of this cave, and, after drinking at the stream below, they returned to

THE BARRANCA CAVE

the entrance and sang their silvery song over and over again. Later in the day three or four large Iguanas crawled lazily out upon the rocks and basked for hours in the sunshine, or scrambled along the narrow ledges of stone, foraging among the low vegetation. Long before the sun's rays became tempered by the breezes of the late afternoon the great lizards had disappeared and the next actors upon the little stage were two small Horned Owls. These were the most difficult of all to observe, as they slipped out at dusk, their dark mottled plumage melting almost instantly into the dimness as they launched out and flew with silent wing-beats upstream. We never discovered when they returned.

The most unexpected sight occurred a little after the flight of the owls. In the semi-darkness of the cave, a confused mingling of shadowy forms was seen, walking about or reaching up with tiny hands — like a crowd of little gnomes, up for a rest from their labours in the great underground smelting-room of the *volcan*. Soon they crowded near one side and in single file crept along the ledge trail which led to the almost impenetrable jungle opposite our camp — ten Mexican Raccoons which made this cave their home.

Once in broad daylight we made our way to the opposite summit, and clambered down, lowering ourselves with saplings and hanging vines until we were at the entrance itself. The only explanation of the apparent

friendly commingling of these reptiles, birds, and mammals seemed to be that the cave extended far inward, not in one large cavity or room but dividing and subdividing into galleries and tunnels, far too small for us to crawl into, but in whose innermost recesses the little wrens probably found safety. The owls perhaps perched high up on the walls, and the Iguanas and Raccoons disposed themselves after a manner best known to them. There is no reason to suppose that any of these creatures were actually befriended, or even tolerated by the others, but the exigencies of cave life had certainly brought together strange companions. Somehow, aided by their diversity of habits, they managed to avoid each other.

The unfortunate end of the piscatory Derby Flycatcher came about in this way. Some of the Raccoons usually made their way directly to the water, and drank and splashed about in the darkness. One evening it happened that the Derby was fishing from a sand-bar on the opposite bank. One of the coons must have stealthily made his way through the underbrush to within a short distance of the preoccupied flycatcher. Suddenly we heard a loud rustle and the poor bird gave utterance to the most piercing screams, which echoed and reëchoed from cliff to cliff. The bedraggled feathers of the bird doubtless rendered it an easy prey. An instant more and a dead silence settled over all. Next morning we found a pile of yellow

feathers, and the telltale bear-like footprints of the animal. The Raccoon returned the following night, but the bird, which he found ready slain, was tied to the pedal of a steel trap, and by the law of fate we enjoyed a delicious stew, made from the fattest of coons. The Derby was avenged.

Filtering through the purifying pumice, a sweet, cold spring gushed out at the base of the cave cliff opposite, and, in deepening a water-hole, I made an interesting discovery under a stone — a good-sized crab, about the size of the Spirit Crabs which are so abundant along the southern Atlantic coast. I was as surprised as if an anemone had drawn in its tentacles before me in this fresh water. Land Crabs are old friends of ours, but a typical aquatic crab, living in this little stream, nearly four thousand feet above the sea, seemed most astonishing. My momentary surprise was the crab's gain, and without warning it sidled away into deep water, avoiding every effort at capture. But one other was ever seen, and that too escaped me.[1]

Toward the end of our stay of a little over a week, insects became more abundant, especially butterflies; yellow ones of four sizes, from minute little dabs of sulphur, fluttering over the blossoms, to great golden

[1] I have later learned that the genus *Pseudothelphusa*, to which this crab belonged, contains over forty species, all living in fresh water, which range over the West Indies, and from the locality in which we were camping, south to Peru and Brazil.

fellows, more than four inches across the wings, which flapped slowly just out of reach. The dainty Heliconias were quite common, and very different from any family of butterflies which we have in the North. Their wings are long, narrow oblongs in shape, a velvety black ground colour, splashed and dotted with bright yellow. When in the net, more conspicuous insects can hardly be imagined; but, although they move slowly, like soaring birds, being protected by nauseous juices of their bodies, yet, in the woods, they blend in a remarkable way with their environment. They seldom come out into the open, or gather at the sand-pools, but keep in the thick underbrush, threading the tangles of vines and fronds, floating and drifting, though not a breath of air stirs the leaves. Here where the darkness of the dense shadows is pierced by narrow shafts of yellow sunlight, the beauty of the Heliconias dissolves, their contrasted colours merging into a cloak of invisibility. Three or four of these butterflies upon a single leaf are not noticeable until they take to flight.

Wasps and hornets now appeared and, in many cases, began to build their nests. Picking up a stone from near the water, one day, I alarmed a brown spider, which rushed out. Instantly a metallic green wasp, less than an inch in length, darted down and the two struggled fiercely together. The contest was short and the spider's legs hung paralyzed and helpless.

The wasp first flew five or six feet into the air, circled around once or twice, then returned, and dragged its prey (which was larger than itself) laboriously to the top of a rock, tumbling headlong down the opposite steep slope into the water. A very foolish wasp, quoth I, but wait: we know not what to expect of these tropical creatures. Without an instant's hesitation, as if it were an every-day habit or instinct, the wasp stretched out its four front legs upon the surface of the water, grasped the floating spider with its two hind legs, and, spreading its wings, buzzed merrily upstream over the ripples! The insect could not possibly have flown with this heavy burden. But the end was yet to come.

The wasp evidently wished to reach a large boulder, some two feet from shore, past which the water swirled rapidly. After several ineffectual attempts to tow its burden across, it clambered along a rock on the shore, dragging the spider just clear of the surface until it reached a spot where the water ran with less force. Here it again launched out, keeping close to shore. This time it reached a point which was a foot or two upstream above the boulder. Then the wasp turned abruptly outward, redoubled its efforts, and instantly was tumbled and rocked about in the midst of the ripples — which, to it, were waves of no mean size. It was carried swiftly downstream, but, by aiming toward the rock and working its wings frantically so that they

were merely a dim haze, it was successful in reaching and remaining in the eddy below the boulder, — still water, — across which it easily ferried its burden. Landing on the moist earth which had accumulated there, it disappeared with the spider into a hole which it had doubtless previously excavated.

The fact of the little wasp using the water as a medium upon which to propel its burden was marvellous enough, but the quick succession of complex events, met with so much seeming intelligence and with such apparent resource of expedient and such dispatch, left us astonished beyond expression. Whether blind instinct, or chain of coincidences, or expression of any higher mental phase, prompted the actions of the wasp, I will not attempt to say, but, to the observer able to overlook the whole scene of operations and to see at a glance all the attending causes and effects, the *apparent* philosophy in the actions of the insect is startling. If my companions had not seen the whole affair I should hesitate to record it in print.

Every day about noon, an old, old man drove several forlorn cows down the trail and up past our camp, for a drink and an hour's feed of fresh green grass. A ragged shirt, a breech-clout, and a pair of dilapidated sandals formed the whole of his outfit. He knew not a word of Spanish, but jabbered cheerfully away to us in some strange Indian tongue, — Aztec, we pleased ourselves by calling it, — as if we understood every

word. When he learned that we were afraid to have his half-wild cattle roaming at will about our provision tent, he took great pains, by means of handfuls of gravel and a torrent of "Aztec" expletives, to banish them to the opposite side of the stream. His greeting was always "Ping-pong racket!" This may seem absurdly trivial and irrelevant, yet these syllables exactly represent his utterance. "Ping-pong racket!" I shouted to him as he appeared with his wild charges. "Ping-pong racket!" he answered joyfully, and patted me on the back with an outburst of incoherent gutturals, doubtless expressing his pleasure at my ready grasp of his mother tongue!

He showed us where the purest and coldest spring was to be found, for which we were extremely grateful. A bowl of *frijoles* drew expressions of extravagant delight from him. But he seemed most pleased if only we would talk to him, although the words could convey not a particle of meaning. I would converse for a while in my choicest German, then harangue him with all the Latin I could recall and perhaps end with an Æsop's Fable, or part of the multiplication table. Whether I gravely informed him that *Artemia salina* could be converted into *Artemia muhlenhausii* by adding fresh water and stirring, or whether I chanted the troubles of Æneas, the venerable "Aztec" courteously listened with the greatest interest!

His final greeting was tremulous and sincere, and, as

we repeated the phrase which sounded so ridiculous to our ears, we felt a strong pity for this poor ignorant man, whose speech was that of long-gone centuries. And yet he had no need of our sympathy. Day after day for years (so we gathered from his sign language) he had driven his cattle back and forth from some tiny village miles away. He was faithful in this and his happiness was full. It was overflowing when, at parting, we gave him some little trinkets and our spare change.

HELICONIA BUTTERFLIES

CHAPTER IX

NEAR THE TWIN VOLCANOS

ONE day we reluctantly broke camp and packed over the trail, with mules and horses as before. Mile after mile we went, now galloping across a level plain, now plunging deep down into a tropical *barranca*. At high noon we reached our objective point — the great Barranca Vueltran, and across its wide chasm the fire volcano loomed near and grand. But Vueltran proved narrow at the bottom, with most precipitous sides — not a good place to walk and watch for animals and birds, so after a lunch of chicken and eggs, to obtain which we searched for the eggs and killed the chicken, we remounted and turned back upon the trail.

The sun sank lower and lower, the night loomed black ahead of us, but we rode on and on into a wild and unknown country, overlooked always by the two volcanos of snow and fire. And still we found no place suitable for camping. We were lost, and found our path by hardest search, with only the pale moonlight to guide us. Mexicans — some of whom appeared too much interested in our luggage — passed us with drawling "*Buenas noches, Señores.*" Weird forms scurried

from our path; girths broke and weary mules insisted on lying down and rolling upon their loads.

At last, exhausted and disappointed at not finding a good water camp, we called a halt and dismounted. The packs were slipped and the Mexican cowboy and his animals left us. We appeased our hunger with *pan dulce* and sardines, and, placing our trunks and bags in a circle, we threw the tent over them and lay down on the ground to sleep soundly until the sunlight woke us and brought to consciousness the strange *dénouement* of our day's journey.

We found ourselves in a beautiful and unnamed *barranca*, and, lucky indeed! with an ample stream but a few yards away, while the changed character of the vegetation showed that a more tropical climate reigned here than in Atenquiqui. Our first undertaking after breakfast was to find a good camping-place, and this offered itself near at hand. We knew nothing of the character of our nearest neighbours, so a little shelf of earth, against a steep cliff, fronted by an impenetrable tangle of thorn-bush and cactus, seemed an ideal location. On this ledge we pitched our tents, utilizing two open spaces below the ledge for kitchen and dining-room. Crusoe on his desert island was hardly more isolated than we in our snug retreat. After we had closed the only doorway with mesquite and cactus, no one could penetrate to our camp, save by enduring a terrible punishment from the frightful array of

thorns and spines. Our blindly selected camping-place was at the junction of an *arroyo* — or dry river-bed

OUR FORTIFIED CAMP

— with the clear *barranca* stream, and, as it proved, we could not have chosen a more convenient and auspicious spot.

One morning two little Mexican children, passing at a distance, spied our tents and approached, their eyes wide with curiosity. We had just finished breakfast, and had an abundance left over. *Señorita's* kind heart took pity on them and she invited them to eat all they

wanted. The poor little half-starved creatures rushed at the food and ate and ate until I hardly thought that they would survive their meal. Before they had finished, a surly-looking Mexican rode up, fairly bristling with revolvers and knives. We recognized him as fulfilling the description of the "bad man" of this district, the leader of a gang of bandits. He may have been a hardened desperado, but *Señorita's* kindness to his children, for such they proved to be, won his heart, and our cereal "cast upon the waters" was returned to us abundantly; for he helped us in finding certain animals and birds of which we were in search, and in a hundred ways thereafter firmly fixed our opinion that a Mexican bandit, when his good will is won, is a highly desirable person to have about camp.

FOUR LONG-TAILED BEAUTIES

In the morning we were wakened by the screams of macaws. When the notes first reached my ear, I knew that I had heard them before, but where I could not think, and not until I rushed out and saw the birds did I connect the sound with the din of a parrot-house in a zoölogical park. There the harsh screams rend one's ears, but here, between the walls of the mighty gorge, it is an entirely different utterance. From high overhead the guttural tones come softened, and our eyes following, we see a pair — always a pair — of the great birds, with their long, sweeping tails and

quickly vibrating wings, passing steadily across the sky. While thus silhouetted against the light, they seemed black, but when they reached a background of rock or trees their colours flashed out — beautiful living greens with lesser tints of brown and golden olive. They were Military Macaws, and they always flew thus closely together, morning and evening, from roost to feeding-ground and back. The number of kinds of birds which remained closely associated in pairs all during the winter was remarkable, and perhaps indicated that many more species of Mexican birds mate for life than is the case with the birds of our Northland.

Before we left the North we said to each other, "Of course we shall see wild parrots," and here were the first of these birds, in the form of these macaws. But we were not in the least prepared for the sight. When all one's life one has associated such creatures as parrots with cages and seed-cups, no matter how prepared in mind one may be to see them free in their native haunts, yet when the actual first experience comes, it is always with a most delightful thrill to the senses. Parrots then were not evolved, hatched, and reared on "T" perches with a cracker in their beaks; but existed after all in as wild and *speechless* a state as other birds!

The macaws were not the only birds of beautiful plumage and long tails. Occasionally a tumultuous flock of Long-tailed Crested Blue Jays, or Magpie

LONG-TAILED BLUE JAY

Jays, measuring over two feet from head to tail, — the grandest of all their race, — burst down the canyon; twenty or thirty brilliant blue and white forms, graceful in every motion, with tall, recurved, fan-like crests, and tails so long and plume-like that the feathers undulate behind them as they fly. In cry and action they are thoroughly jay-like, and in curiosity they equal

any member of their family. Quietly hidden under thick brush, I often looked forward to an interesting hour's watching of the wild life, when the sharp eyes of one of these inquisitive birds would spy me out and put an end to all need of concealment in that vicinity. He would shriek and cry his loudest, alarming the most confiding species, and making every bird within a quarter of a mile uneasy and suspicious. Some of these jays have white throats, outlined by a band of blue, while in others the whole throat and front of the neck is black. Perfect gradations existed between these two extremes, the difference being due solely to age. The jays seemed to feed on anything — nuts, seeds, berries, insects, and even small birds, which, apparently paralyzed with fear at the shrieks of the blue marauders, were an easy prey.

A very different bird is the Rufous Cuckoo, which is to our cuckoo as the Long-tailed Crested Jay is to our Blue Jay — an extreme development fostered by this *lifeful* tropical country. No loud-voiced rascal was this cuckoo, but a slender shadow of a bird, which slipped so easily through the thickest coverts that the eye was continually losing him. At times but a distant glimpse might be had, and again a pair of the birds would sit quietly within five or six feet, moving in their peculiar flowing manner from branch to branch. They are exquisite in their plumage, which is downy, like fine silk — a rich brown rufous from head to tail,

while beneath, the ruddy hue melts insensibly into pink and pearl-gray. The cuckoo had the badge of his family in the quadruple gradation of the tail feathers, each one tipped with black and white. The tail expresses every emotion of the bird, now closing to a line and following the creepings of its owner; now spreading to a parti-coloured fan, as he hovers before a leaf and snatches an insect; now raised high over his back, as he stops for a watchful glance at us. We never tired of watching these beautiful birds, so quiet, so gentle of movement, and so soft in colour. When quietly feeding they occasionally utter a soft *mew*, and when suddenly alarmed, as at the tumult of the jays, a loud *chirp*, like the alarm-note of the robin, escapes them.

Those strange unlike cousins of the cuckoos — the Roadrunners — never descended into our green *barranca*, but in the straggling mesquite near the top of the cliffs, their slim forms, mottled and coloured with an indescribable pattern of grays and browns, were not uncommon. What mighty steel springs must be in their slender legs! always crouching, as a runner starting to sprint, and they are indeed runners and leapers of the highest rank. One sailed into view one morning from over a boulder, changed locomotion from wings to feet, without an instant's hesitation, and leaped eight feet straight upward to another boulder, where he squatted and watched us, his crest nervously rising

and falling. Now he spied a lizard below him, slipped off the stone, and dropped like a plummet upon the reptile. One stroke of the bill killed his prey and then the bird stood upon it, with his tail raised so high that it pointed forward, like that of a wren. The Road-runner loves the desert with its hot sand, its dusty cactus-pads, and its dry mesquite. No water trickles there, no leaves rustle, no birds sing amid the solitude; and the Roadrunner too is dumb, venting his feelings only in an occasional loud castanet clatter of his mandibles — like the breaking of dry sticks.

The feet of the Long-tailed Jays, with the usual three toes in front and one behind, seemed perfectly adapted for perching; but when we observed the macaws climbing about the branches of trees, we thought how admirably the condition of two toes in front and two behind was adapted for climbing; but here was the cuckoo as much at home in the trees as the jays, and the Roadrunner, also with equally divided toes, doing everything, running, leaping, climbing, and perching; so we withdrew our theories of "best adaptations" in confusion. If only Nature would make her *whys* and *wherefores* more plain!

PARROTS AND FLYCATCHERS

Before we had been in camp two days, a flock of small parrakeets — the Red-and-blue-headed — dashed past the tents and alighted near by. These little

THE ROADRUNNER

fellows have an individuality which is irresistible. They are the most sociable little creatures, calling loudly to each other when on the wing, and keeping up a continuous low chuckling and chattering when perched. One would climb, foot over foot, to a large fruit, take several bites and return to his mate, close to whom he would snuggle and offer his head for an affectionate nibble. The favourite fruit of these birds was very sticky and juicy, and the little creatures were almost always in a disgracefully soiled condition,—their bills and heads encrusted with the gummy liquid. These little parrakeets were not shy, but very watchful, and, when frightened, they always flew to a curious tree which, though bare of leaves, was sparsely covered with an odd-looking, long and four-sided fruit of a green colour. Under such circumstances they alighted all together, and, unlike their usual custom of perching in pairs, they scattered all over the tree, stood very upright, and remained motionless. From a distance of fifty feet it was impossible to distinguish parrakeet from fruit, so close was the resemblance. A hawk dashed down once and carried away a bird, but the others remained as still as if they were inanimate fruit. This silent trust in the protective resemblance of the green fruit was most remarkable, when we remembered the frantic shrieks which these birds always set up at the approach of danger, when they happened to be caught away from one of these *Parrot-fruit* trees. These latter

PARROT-FRUIT TREE

have no common name; botanists know it as *Pileus conica*.

Several times during our stay we saw a beautiful sunset flight of Finsch Amazon Parrots. A flock of two hundred or more, massed together as closely as possible, appeared high in air, alternately soaring and

fluttering. Then the entire flock swung earthward in a magnificent loop, from wall to wall of the *barranca*, the delicate lavender edgings of the feathers showing plainly as they swept past with a loud whirr of wings, each little foot clinched tightly close to the tail-feath-

PARROT FOOD

ers. Upward they went again, swinging together with a grace and unison, of which one never gets a hint

from caged specimens. All the time the macaws floated past high in air toward the west — two and two — as alike as a single bird and its shadow.

Evening after evening we were mystified by the call of some bird which came to our ears at the same hour. For a long time the bird evaded our search. Lying in wait in the hope of getting a photograph of a gigantic raven which occasionally wheeled and croaked about our camp, I saw a long-tailed greenish bird dash past me and perch near by. It sat very upright and its tail hung straight down, and it was like nothing that I had ever seen before. And no wonder, for it was a Coppery-tailed Trogon, the type of a family of birds new to me. The green of the bird's back and tail was not conspicuous, but, when it darted up into the air and returned to its perch facing me, the full glory of the delicate rose-pink on its lower breast was apparent. This hue is evanescent, not only in shade but in composition, and in the skin of a dead bird it will fade, and if exposed to the light, will, in a very short time, completely disappear. The call of the trogon, uttered especially toward evening when it came to drink, was a soft series of melodious notes, reminding one somewhat of the content-call of a hen with chickens. Regularly at dusk two of these birds went to roost in a dense tangle of wild clematis, whose soft, fluffy seed-plumes were at the height of their ripened beauty.

Little doves were very abundant about camp, both

the Mexican Ground Doves and the Long-tailed Incas. They rattled the dead leaves, making noise enough for creatures many times their size, and went scurrying through the undergrowth like little brown mice. When frightened they clattered up and jerked themselves through the air to the nearest tree, where they perched lengthwise along the branches like Nighthawks. This little trick was apparently practised by the doves of only this locality, as elsewhere they seemed never to have learned it. The familiar Mourning Dove of our

MOURNING DOVE

Northern harvest fields was also abundant, spending the winter with these smaller cousins.

The stream ran too rapidly for kingfishers at this place, but Black Phœbes were abundant. Rock Phœbe would be an excellent name for these birds, which perched all day on the boulders in mid-stream, making short dashes at the gnats which hovered over the foaming water. The note of the Black Phœbe is sharper, not drawn out like the voice of our phœbe, but pronounced and distinct, just as his colours are clear-cut and sharp-edged, — black above, white below, — giving him a decided character, very different from the commingling of dull hues of our bridge bird.

The sun reached our little camp beside the stream much earlier than it did in the Barranca Atenquiqui, and this early warmth, together with the many flowers and juicy wild fruits on the sloping walls around us, attracted many insects, and consequently flycatchers abounded. We found no less than ten species of these birds near camp, and others were seen, but too imperfectly for identification. So similarly were four or five of these species coloured that it was most confusing to tell which was which, unless several were in sight for comparison. For every size of insect there seemed to be a flycatcher with corresponding expanse of beak, although at this season fully two thirds of the food of these birds consisted of berries, two kinds predominating, one currant-like and the other larger, with pits

like those of cherries. But wherever a goodly number of insects were gathered together, there the flycatchers quickly came.

Our old friends the beautiful Vermilions were not

QUERULOUS FLYCATCHER

common, but the Ash-throats were very abundant, and their far-reaching *che-hoo'! che-hoo'!* rang out frequently. Swainson Flycatchers, looking for all the world like phœbes, were confiding and gentle little birds, and, together with a smaller yellow-bellied species, known as the Querulous, often came close to camp and watched us curiously. One morning a familiar note brought me quickly out of my tent, and, in

the tree overhead, seeming strangely out of place in this wild Mexican landscape, was a company of Least Flycatchers. We regarded every familiar bird with suspicion at first, fearing that what seemed so well known might be some Western or Southern variety, but there was no mistake this time. The half-dozen little

LEAST FLYCATCHER

gray forms sat and flung *che-becs'!* at one another, exactly as they would do in Central Park, or in the Orange Mountains, a few months later. It was too

early in the morning for insects, and the little birds remained quiet until, startled at the click of my camera, they were out of sight in a moment.

The four largest flycatchers (all gray or brown above, white-throated and yellow-breasted) were the Giraud Flycatcher, the Cassin Kingbird, the Derby, and the Pitangua Tyrant. The latter bird — the giant of all flycatchers — can hardly be left unnoticed here, as it was so conspicuous a feature of our surroundings. It was larger than even the Derby, and it had a bill so

GIRAUD FLYCATCHER

flat and broad that a frog was instantly brought to mind. Its hoarse cry was very different from the notes of the other birds, and was not unlike the *tearr-r-r!* of an anxious mother tern. When several pairs of these birds alighted in a near-by tree, they seemed the very grandsires of all flycatchers. The Least Flycatchers did not deserve their name, at least not in this *barranca*, for we now and then caught sight of the tiniest and shyest of all — the Beardless Flycatcher. It was undoubtedly a bird of this species, and we were sorry that we did not succeed in getting close enough to it to learn some of its habits. All of this species which we saw later were feeding on small berries and not on insects.

THE STREAM AND ITS FIG-TREES

Whether we sat quietly by the foaming stream or picked our way through bushes and over rocks along its banks, there was always something new and strange to see, and if we could have remained years instead of a week or two, there would have been no lessening of interest on our part. Mexican Cormorants flew back and forth, and, for an experiment, one day we had Ricardo parboil one for us and then make it into a stew, and we were surprised to find that the meat was tender and that it had no disagreeable odour. These cormorants varied their diet of fish with certain aquatic plants, which grew in the more quiet pools. Mallards

VIEW IN THE BARRANCA

and Cinnamon Teal passed now and then, seldom alighting.

Perhaps the most constant haunters of the stream were the Violet-green Swallows, whose white breasts were seen all day long, darting up and down its course;

now shooting ahead and suddenly bringing up, balancing a moment on half-spread wings, then darting on again. Back and forth they would go, in loose, irregular flocks, winnowing the air of insects. Fifty or more would straggle past and a few minutes later return downstream, apparently remaining in the warm zone, sheltered from the winds, where insects were more abundant. These swallows and the Black Phœbes were active even during the greatest heat of the day.

Not far from camp were several groves of wide-branching wild fig-trees. These were the grandest trees of this part of Mexico, branching almost from the ground and stretching out their vast mass of foliage on all sides. Some of them measured fully ten feet through, near the base. Their fruit is devoured by cattle, deer, and birds, although in this locality it was not yet ripe. Scores of birds were sometimes found in one tree.

The bark was only slightly roughened and was of a light colour, and on many trees meandering black lines extended along the underside of the limbs and branches, meeting and again separating, until they formed an irregular network, ramifying throughout the whole tree to the very topmost branches. These were earthen tunnels made by a species of small flesh-coloured ant. The tunnels crumbled at a touch, and, from each opening at the sides of the exposed area, a legion of ants appeared. They did not immediately rush out, but the entire

ragged opening of the tunnel was instantly lined with them standing partly inside, with the rear ends of their bodies pointing outward, and the venomous sting, with which each was furnished, working ominously. After

ANT-TUNNELS ON A FIG-TREE

a few minutes of quiet, the insects turned and advanced slowly, with inquiring, quivering antennæ, and jaws wide open, ready for attack with either end of their bodies. A hundred or more walked thus idly about, as if on guard, while hosts of others brought pieces of earth and mould and began to rebuild the broken tun-

nel, adding, bit by bit, to each end until the covered runway was again continuous.

If an ant was accidentally crushed, a strong odour of formic acid filled the air for many yards. No matter in what part of the tree, or at what particular point in the miles of tunnels a disturbance occurred, the ants poured out in myriads to repair the damage. They must have been greater in number than the very leaves on the trees. The tunnels led into the ground, where the main home of the colony was doubtless situated, and into which the pieces of leaves cut off in all parts of the tree were carried. A more terrible experience than having to climb a tree thus guarded could hardly be imagined, and yet large black squirrels occasionally ran rapidly from branch to branch in these very trees. But it was unlikely that even they remained long in the vicinity of a damaged ant-tunnel.

Certain species of birds were confined to a very limited area. Robins we saw nowhere except in these groves of wild figs, where they frequently shared a branch with some brilliant tropical bird — dwellers of lands far apart, associated for a time in the same tree. Here, too, we found the little Godman Euphonia in abundance —four inches of violet and yellow ; the male with his bright yellow cap, breast, and under parts, and his mate of a sombre greenish. The voice of the Euphonia is out of all proportion to his size — a loud but slow and hesitating *phe-ut' ! phe-ut' !*

Two other birds which had a very local distribution in this locality were the Dugé Warbler and the Varied Bunting. The former were nervous little creatures, instantly bringing to mind Maryland Yellow-throats in actions, notes, and choice of haunt, which latter was always the low willows and other bushes fringing the water. Here they were found in abundance, and with them the Varied Buntings in even greater numbers. Toward the end of our stay we frequently saw the male buntings display their beautiful blue, red, and purple hues and their "plum-coloured waistcoats" before their brown sparrow-like mates. The Dugé Warbler is one of the most northern representatives of the genus *Basileuterus*, which, in number of species, is as highly developed in Central and South America as is the warbler genus *Dendroica* in the United States.

A Mexican boy, with the thoroughly Mexican name of Benito Torres, attached himself to our camp as general assistant, and proved to be honest and helpful. Every morning he walked from his native village, six miles away, with milk for our breakfast. I went off on some long trips with him and learned much of a Mexican boy's lore concerning wild things. He had the keenest scent of any person I have ever known. With a single sniff he could invariably tell whether the inhabitant of an armadillo's burrow was at home or not. This I proved, both positively and negatively, again and again. At climbing he was wonderfully expert.

I believe he could "shin" up a thick marble column! His toes would clutch the irregularities in the bark, as

BENITO

does the foot of a squirrel, and the strange fruit or flower which I wanted would soon be in my hand.

When we went on gunless hunting trips at night, for the purpose of watching the wild creatures, he taught me

the singularly musical yodel, which the Mexican Indian uses in attracting the curiosity of deer and other animals. Once we were carefully stalking a noise — it was too dark to distinguish anything ten feet away — when Benito softly gave the call. For a moment there was silence, then to our surprise an answer came back and there stepped into view an Indian with an old-fashioned huge-bore gun, which he said, in a half-frightened way, he had been just about to fire in our direction, thinking that we were the deer he was after. Thus this yodel of the Mexican serves two purposes. It attracts the attention of the wild animal without startling it, and it also is used to let hunters know whether man or beast is near, thus avoiding the danger of shooting a man by mistake. Occasionally in our tents at night we heard this musical yodel echoing over the trail! If after a moment there came an answering call, then we knew that man had met man on the lonely mountain trail; but if to the call no answering cry came, then in the darkness some wild creature stood, every sense on the alert, every muscle held tense, and great wide eyes staring out in the night to find the cause of this strangely soft yet penetrating cry.

It was on one of these trips, when Benito was beating a clump of underbrush, sending lizards and birds scurrying out, that three giant goatsuckers sailed out and flapped blindly past. They were whip-poor-wills twice magnified. We flushed them several times and

then they flew off through the woods and we could not find them again. This was my only meeting with the great Mexican Goatsucker. Poor Benito! Honest and willing to a degree, his ignorance was pitiful. Imperfect Spanish scholar that I was, I soon mastered most of his vocabulary. One word with him would stand for a score of meanings, more or less related, the significance eked out by some eloquent and suggestive gesture. His sign language always saved him extra words, and it needed no translation.

THE PENDULUM OF THE BARRANCA

It was in a grove of wild fig-trees that I first saw a Mexican Motmot, one of the most interesting and characteristic of the birds of the *tierra caliente*, and perhaps the most beautifully coloured of all the birds we saw in Mexico. One's first impression of a Motmot, as seen at a distance, is of a large-headed, brown and greenish bird, with a broad bar of black on the head. We were fortunate enough to be able to study one of these birds in our very camp. With a lucky shot I stunned one with a small-calibre shot-cartridge. The bird soon recovered and remained about the camp, retaining its full liberty, feeding upon scraps of meat, or occasionally catching insects for itself. Its favourite perch was a branch of a flowering *clavillina*, to which one end of the ridge-pole of our tent was tied. Here day after day it unconsciously posed before the camera,

the only matter for regret being that its exquisite colouring, which showed so beautifully on the ground glass, must be lost on the negative.

The bill of the Motmot is large and deeply toothed or serrated on each edge, and when angry the bird took firm hold of one's finger and suffered itself to be carried dangling, for several yards, before flying off. The crown of the head and neck are bright cinnamon, shading into a beautiful grass-green on the back and wings. The large, soft, brown eyes are surrounded by a circle of feathers, very small, circular, and black in colour. Back of the eye is a broad tuft of black, banded above and below with beautiful blue. The breast is a most delicate emerald green, shot with pale blue, while exactly in the centre is a conspicuous, black, feathery pendant, or tuft, similar to the eye-tufts.

But the most remarkable characteristic of the bird is its long tail, which is greenish blue in colour, while the two central tail-feathers, longer than the others, are bare of barbs for about an inch of their length, each feather ending in a full-vaned racket. The strange thing about this ornament is the fact that it is produced by the bird itself. When the young birds attain their full plumage, the elongated pair of feathers in the tail are perfect from base to tip. Guided apparently by some instinct, each Motmot begins to pick and pick at these feathers, tearing off a few barbs at a time with its bill. This is kept up until the tail is in the condition

which is shown in the photograph, and at each succeeding moult the process is repeated.

This symmetrical denudation of the tail-feathers might be explained as a remarkable attempt at æsthetic ornamentation on the part of the male to make himself more beautiful in the eyes of the female; but unfortun-

BACK VIEW OF MEXICAN MOTMOT

MOTMOTS' TAILS, YOUNG MALE AND ADULT FEMALE

ately for this theory, the habit is as strong in the one sex as in the other. When the feathers grow out anew, although the barbs are all present, yet the vane at this point is narrower than elsewhere, perhaps showing that the continual exercise of this habit for generation after generation is in some way having an hereditary effect. But we cannot be at all sure about this; the inheritance of acquired characters is too unproved a theory to warrant any such assertion. The real cause of the habit would be a most interesting one to solve. In some of the birds which we saw the process had just begun, only a few barbs being torn away.

The day on which I found my first Motmot was very warm and sultry, and I was glad of the shade of an acacia. A Black-throated Gray and a Pileolated Warbler were fearlessly feeding within a few feet, snatching tiny insects from the blue flowers which covered the tree.

Every green and gold feather on the body of the little Pileolated was unruffled, and his tiny monk's cap shone in the sunlight like burnished jet. My glance slipped past him, and there sitting motionless was a Motmot. I had often wondered, when I saw mounted specimens in museums, with what special immunity from danger these birds were blessed, their beautiful colouring would seem to be such a startling advertisement of the bird's whereabouts. But in reality the very diversity in hue is their protection, and they merge perfectly into their environment of green foliage and bright sunlight. Although these birds measure fully a foot from head to tail, yet it is not their size but their voice which usually betrays them. This is a most startling utterance; several harsh *churrs!* followed by three distinct, beautifully liquid notes; but even when this was heard near at hand, little clew was given as to the bird's whereabouts, for the tones were so loud and had such ventriloquial power that they seemed to come from all directions at once. No sound that I heard them utter could possibly be construed into the syllables *motmot*.

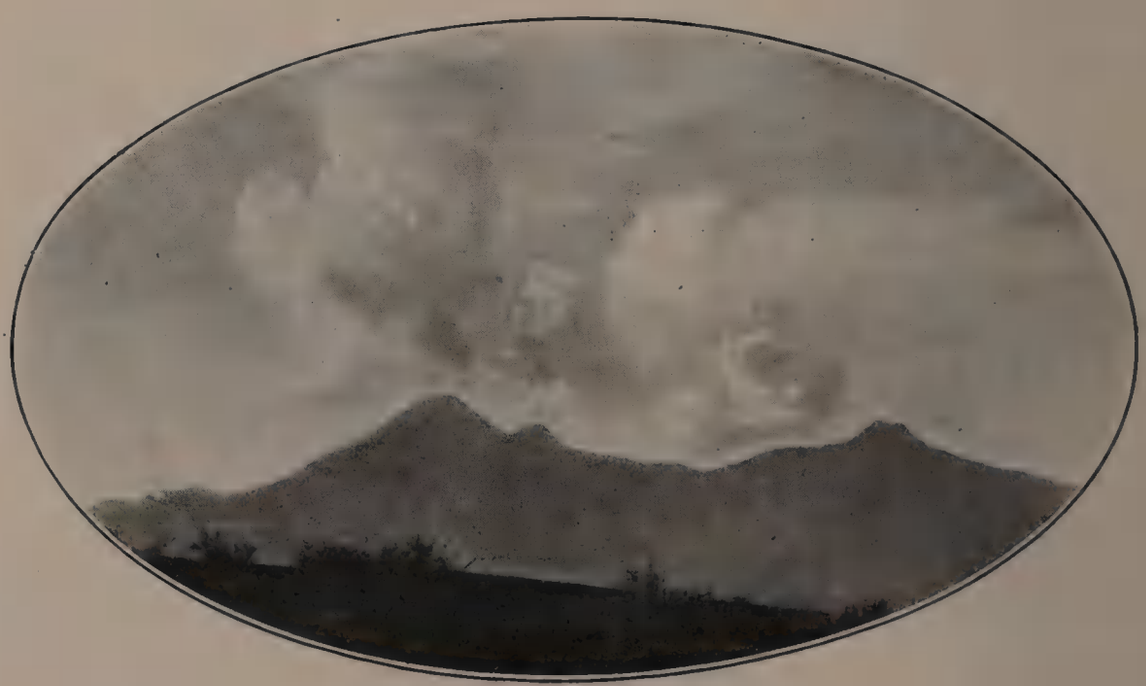
Motmots are not shy, but will permit one to approach quite closely before taking a short flight to a neighbouring tree or bush. Just before they fly they usually give utterance to a low *chuck! chuck!* — evidently an alarm-note. This was the common sound uttered by my tame bird when I attempted to catch it. What betrays a Motmot more surely than its colours or even its voice is the curious pendulum motion of its tail — from side to side, and, more rarely, up and down. When the bird blends so perfectly with its surroundings that the eye fails to locate it, the horizontal swing of its tail marks it out. This is not a true pendulum motion, as the tail snaps to the highest point, and is held there for a moment before being jerked to the opposite side.

Although the feet of the Motmot are weak and adapted only for perching and its usual method of feeding is to catch insects upon the wing, yet more than once, while watching these birds, I saw them fly to the ground and scratch awkwardly, picking up food after each disturbance of the leaves. There was still another habit which I should dismiss as an individual freak, except for the fact that it was observed in three different birds. These particular Motmots were not aware of my presence, and after feeding for a time, they flew to an open sunny spot, flung themselves flat upon their backs and, spreading their wings, enjoyed a sun bath. The only other bird which I ever knew thus

voluntarily to invert itself was a Condor, and that took place in captivity.

Like their distant cousins the kingfishers, these birds bore a tunnel into a vertical bank and make their nest at the end, six or eight feet within the dark earth. The pure beauty of the water-lily is conceived in the filthy, noisome mud at the bottom of the pond, and the delicate hues of the Motmot are acquired in a black, ill-smelling, underground hole.

We shall ever regret not seeing these birds during the period of nesting, but as with almost all other birds in this country that occurs later in the year. One must visit Mexico in the spring to study the birds at the most interesting of all times — the breeding-season.



TWIN PEAKS OF COLIMA VOLCANO

CHAPTER X

THE MAGIC POOLS

WITHIN fifty paces of our tents a spring rose among the rocks and trickled over a level strip of sand and through low bushes, meandering so slowly that it filled several broad shallow pools, before filtering almost imperceptibly into the rushing *rio*.

Here during the first few nights of our stay, Mexican Deer came in numbers to drink, but when the smoke of the dying embers of our fire began to taint the air, these timid creatures frequented another pool a few yards farther downstream — out of sight around a bend. In broad daylight we surprised a soft-coated doe — a slender, graceful creature whose white tail flashed up at sight of us. With one mighty bound, she half spanned the stream and sank out of sight in the water. Up and swimming in an instant, the deer surged ahead, and, when just about to be dragged by the swift water into the foaming rapids, she gained a foothold, staggered against the current, and dashed off into the jungle.

The series of small pools was a favourite drinking and bathing place for many interesting wild creatures.

Here came the brilliant tanagers — neither the Louisiana nor the Hepatic nor the Cooper, which we had expected to find, but the same Summer Tanager whose flaming red form is so common in that place so beloved of birds, — and some of us, — an old-fashioned Virginia garden. In the cool pools, a quartet of these birds — two scarlet, two green — splashed and fluttered each morning. The green-garbed females then led the way to some high, sunlit tree where each feather was preened and dried and the living spots of flame, from very joy of life, gave utterance to their liquid double notes.

Sometimes the Mexican Pileated Woodpeckers deserted their wild figs and came in great swinging loops of red, white, and black for a brief drink at these magic pools. Never before had I seen a member of this sturdy race of woodpeckers on the ground. How they do pound the sounding-boards which they find ready to hand, fashioned by the lightning and seasoned by the weather! Their heads vibrate until their scarlet head-plumes become a ruddy blur, and the reverberating roll comes clear and crisp. Their notes are loud and varied, and when suspicious of danger, their calls are like the excited scolding of Red Squirrels — though much louder. They delight to swing on the slender, uplifted arms of the organ cactus, leaning far back from their firm support of feet and stiff tail-feathers.

In one of the lower pools was a string of frogs' eggs — a black-beaded cord of gelatine, five or six feet in length. One day a large tadpole swam lazily along near the shallow edge, nibbling at the green scum. A lizard jumped at him, bit off a good section of tail, and disappeared among the rocks. The shock seemed to paralyze or kill the tadpole at once, and, wrong side up, it floated along with the current. Tiny fish snatched at it, white-spotted water-beetles danced around and around it, green water-boatmen glided to it, but on went the unfortunate tadpole. Caught in an eddy for an instant, a giant claret-coloured mud wasp tried to clutch it, but failed. Onward a few feet it rushed and came to rest in a second pool, where it whirled about for the last time, for a Black Phœbe darted like lightning upon it, snatched it from the water without wetting a feather, and went back to his rocky perch, flirting his tail with satisfaction.

A Mexican tadpole must needs indeed be wary if he wishes to live and grow up, like his parents, to sit upon the brook's edge in the pale moonlight and thrum the great bleating roars, which resound with a heavy reverberating rhythm from wall to wall of the *barranca*.

THE THIRSTY ONES

This is a thirsty land and the pools of sweet water are the drinking-places, not only of deer, raccoons, birds, and other creatures of fur and feathers, but in-

sects of all orders flock to the muddy edges. Flowers are scarce, and if nectar is not to be had, why, clear volcano water is not a bad substitute.

In the morning, when the sun began to warm the lower air of the *barranca*, little yellow and black butterflies (*maripositas* was the poetic name by which our Mexican cook knew these tiny insects), and many brown-winged, crook-antennæd skippers came, together with hosts of wee lavender-wings. One small species had long filamentous tails to the hind wings, which were kept constantly in motion, up and down, when the butterfly was otherwise quiet, with its wings closed together above the back. The remainder of the insect was of a dull hue, but these bright orange tails were visible for fifteen or twenty feet, looking (the simile was again and again brought to mind) like an ant with immensely large head and body, wriggling violently about in one place. Such an illusion would seem of no possible advantage to the insect. Indeed I could never discover what saved these butterflies from instant detection and attack on the part of the many flycatchers.

When the full heat of midday started cracks in the parched pool edges, great white and yellow fellows would float lazily down from the tree-tops, drift across the water, and alight on a mud hillock. Their six legs carried them to the damp dark earth and here they uncoiled their watch-spring tongues and drew up the cool moisture. So greedily did they imbibe that one could

walk up to them and pick them from their places, while at other times these very butterflies would not come within many yards of our net.

The under side of the wings of these insects was a pale pea-green; while above, one species (*Anteos mœrula*) was of a delicate yellow-green, and a second species (*Anteos clarinde*) was whitish with a bold stain of the richest, warmest orange. When these latter alighted, their wings snapped together, and what a moment before was a conspicuous span of colour was now but a faded greenish leaf fallen to the pool's edge.

With these, in the heat of the day, came rarely beautiful butterflies of jet, shot with rich purple. Only a few were seen and these were wary and alert. Their wings were never still. When they alighted for a moment's sip beside the pool, their legs were bent, their wings nervously a-quiver, ready for instant flight. A Black Phœbe once dashed at one with a lightning swoop, but the motion of the bird was leisure itself compared to the swift escape of the insect. The only way to capture one of them was to stalk it carefully, creeping behind rock and bush, and swooping with the net a full yard beyond the insect. Even then the chances were always in favour of the butterfly.

Mud wasps — yellow, red, and white — worked all day gathering tiny pellets of the stream-refined clay, bearing them aloft to plaster tree or rock with egg-protecting tunnels; undoing, in their small way, the

work of the elements. Red-barred tiger beetles flew and scampered about, grotesque toad-hoppers made flying leaps from the nearest trees to the water.

These and many other insects had their favourite hour at the Magic Pools, and when the afternoon waned their place was taken by ever-changing hosts of other thirsty ones. When the great shadow leaped the brook and began to climb the opposite slope, the wood-sprites descended from the sweet-flowered acacias. First, those which, in habit like Catocala Moths, loved the trunks of rough-barked trees. Very different from the giant Yellows, they always kept their wings spread. Their life-secret, which must ever be hid from the eyes of the world, is the light gray splashing of their under wings. To show this were to court death quickly. So with low-curved wings they sailed in an even slope to the mud, upon which they flattened their lichen-hued pinions. When their thirst was quenched there was no dallying. With three or four quick flaps they hurled themselves at the trunk of the nearest fig-tree and vanished. During this swift return flight, at each movement of the wings, a sharp crackling sound was made.

Verily instinct is not a thing at which to scoff. Here was a fragile insect just hatched from its inert chrysalis. It saw other butterflies fluttering slowly past, alighting at the edge of the water and waving their wings in enjoyment of the cooling drink. Why should it not do likewise? Why should it, unlike them,

sail steadily from tree to pool, snatch a proboscisful of the water, and dash frantically back to the roughened bark, there to cling motionless with flat pressed wings, until its thirst calls it again to the pool? How could it know all this? How could such philosophy be passed on, through egg and worm and chrysalis, to its tiny thread of nerve-stuff? We asked in vain, and the great fig-tree rustled its leaves in the wind and seemed to close protectingly around the insect which had flown, so full of trust, to its bark. These butterflies (*Ageronia atlantis*) were very abundant in certain places at the edge of the jungle, fluttering in the air a moment and then snapping back, flat to the trunks of trees as if governed by some form of magnetism which they were powerless to resist.

Another wood-haunting species of butterfly (*Victorina stelenes*) defied detection even when we knew to a certainty its position to within a few inches. Its wings were dark brown, blotched with large ovals, circles, and irregular figures of transparent green. When it alighted, it held its wings flat and vanished from sight, hidden by the myriad spots of sunshine and shadow all about it, which the markings on its wings so exactly simulated.

THE FAMISHED ONES

However continuous and varied the succession of thirsty wild creatures all through the day; however

rarely or frequently any species haunted the *barranca* near our camp, one at least seemed never absent. Probably every step or motion we made — from early morning to the last tying of the tent flap at night — was watched by the omnipresent eyes of a vulture, either near at hand or a mile above the *barranca* wall. With our most powerful glasses we sometimes detected in the blue heavens a tiny black mote, which the naked eye could not distinguish. And yet to such a bird our every motion was doubtless visible. At such a height the *barranca* abyss must be like a mud crack near the pools; we, tinier than the lesser insects. No realistic picture of this country should ever lack a black form, high in the sky, soaring incomparably with wide-extended primaries, clutching ever at the empty air.

When nearer, the vultures seemed hardly birds, so silent and fearless were they. The Caracaras, which associated with them, were more wary and given to occasional screams. But the buzzards, flying near, whether black or red-headed, only peered silently at us, their whistling wings passing close overhead when the report of our gun brought to them hope of some slain bird, lost or fallen out of our reach. Fifty times they sailed onward, disappointed. The fifty-first time they came as quickly, peered as eagerly. Hunger must often pinch them sorely, living things are so abundant, dead creatures so seldom seen. When we set traps for opossums or raccoons, unless carefully concealed, it was

more than likely that the next day a coughing, unsavoury vulture had devoured the bait and was waiting patiently to be set free.

One day at the edge of the stream, I undertook to prepare an armadillo for the pot. His tough skin made it a rather difficult and engrossing task and for some twenty minutes I did not look up from my work. While on my way to the water I had thoughtlessly noticed a single black speck high up overhead, so usual a sight that I hardly remembered it. When at last I rose from my completed work and painfully stretched my cramped limbs, every dead tree and conspicuous boulder within a large area held its complement of vultures — Black and Turkey. It was most uncanny. Their skinny necks stretched out toward me; nearly a hundred red and ebony heads peered through leaves and over rocks and dead limbs, forming a ring of watchful ghouls. Overhead the sky was quartered in every direction by scores of others. Within a few minutes all these birds had come, each guided by the suggestive descent of some brother vulture, who in turn had well interpreted *his* neighbour's actions. All were waiting patiently for the expected feast. And *what* a feast! It was the "loaves and fishes" over again without any chance for a miracle. Nearly two hundred birds — all told — as large as turkeys were eagerly waiting for the moment when I should leave to them the remains of *one small* armadillo!

It is strange that this host of famished ones never gets up courage enough to attack living creatures of any size. We once observed a half-hearted attempt upon an Iguana. The vultures often swoop close to these lizards as they lie basking in the sun, but this particular vulture alighted close by and made an ugly rush at the prostrate reptile — hissing and pecking at him. The Iguana did not drop at once, but turned tail, not to run, however, but evidently to bring this member into play, and a single fell swoop of this muscular appendage knocked the feet of the vulture from under him and he flew off hissing with disappointment, while the Iguana dived to the bushes below and sought his hole.

THE POOLS AT EVENING

The most interesting time to watch the Magic Pools was toward late afternoon, when our shadow dial had climbed well up and only the higher parts of the cliff still glowed with the sun's rays. The Iguanas which had been basking high among the branches now clambered down or voluntarily pitched themselves head first into the underbrush. When they are flattened out close to a branch, it is almost impossible to detect them, not only on account of their marvellous likeness to the mottled bark, but because of their habit of slowly slipping to one side or the other, keeping the branch always between you and themselves. If we sat quiet and sent

the Mexican to the other side of the tree, the Iguanas would forget our presence and think only of the moving figure beneath them. As the boy passed to the other side, a dozen shapeless forms would revolve slowly upon the branches toward us.

It was startling, to say the least, when watching for the first arrivals of the evening, to see a huge black apparition shoot through the air, limbs and toes wide stretched, to land with a crashing flop into some thick bush. No wonder Pterodactyls and birds evolved early from an ancient reptilian stem, if such recklessness inspired them; such trust in a medium through which they must, at first, have fallen with as leaden a drop as did these Iguanas!

Cormorants and teal now at the end of day flew downstream with steady rapid wing-beats and the swallows disappeared suddenly, going early to roost. The last butterfly and wasp reluctantly left the pools, driven by the cool breeze which began to drift down with the stream from the cold mountain-tops. The quaver of trogons was heard, coming from the upper *arroyo* to drink and then to roost in the feathery masses of downy, white clematis. Canyon Wrens quenched their thirst and the cool water cleared their throats for a few minutes of sleepy, silvery notes — the merest hint of next morning's chorus.

The first bat flitted past and — strange custom for such creatures — clambered down a steep rock and

lapped eagerly at the little pool. From the top of the rock he then took a flying drop and was off on his night's hunt.

The light had now lessened considerably, and, half concealed in a little hollow among the boulders, we were not observed by any of the creatures which passed to the water. Almost at the same minute each evening doves began to drop down and drink — long and thirstily — dove-fashion. Mourning and White-fronted Doves whistled by us in hundreds, drank and flew on past the tents up the *arroyo* to some secluded roosting-place. During the day these doves were scattered abundantly all over the surrounding uplands, feeding on berries and fruits. They were fat and tender and formed our staple diet, being always easy to obtain and quickly prepared.

Shortly after the last bird straggled past, there arose, from some quite indeterminate direction, a low, soothing monotone; a sound so indefinable, so minor a chord in Nature's harmony that it escaped the ear at first. Soon it became more distinct — a double throb could be distinguished. It seemed to come from a solitary dead tree which was silhouetted against a certain spot over the *barranca* wall, where the moon would soon rise. "*Whip-will! whip-will! whip-will!*" we interpreted it. But the resemblance to the note of our Northern bird of the night was but slight. Soon a something appeared from the dusk and a patch of black

rested upon a stone where nothing was before. It seemed rat-like, and crept slowly toward the water, at the edge of which it stopped and drank. Then it took to wing and flew in low circles back and forth. This

RIDGWAY WHIP-POOR-WILL

was the author of the mysterious monotone, which evening after evening had held our attention and excited our curiosity. And even when we had secured a specimen and learned the name of the bird, it was but to unfold another mystery. It was the Ridgway Whip-poor-will, the second of its kind ever discovered. The first was observed several hundred miles south of our

camp, and of its nest and eggs and wanderings nothing is known. This bird which came so familiarly to drink at the pools was once joined by its mate — presumably — and the two hawked together over the low rocky ground, engulfing unfortunate gnats and moths. More abundant, but absolutely silent, the Mexican Whip-poor-wills haunted the bushes, beating the insects from their tops and snatching them as they took to flight.

MYSTERIES OF THE NIGHT

A Ring-tailed Cat squealed from the entrance of its cave somewhere up among the dense shadows on the cliff wall, and presently the little animal leaped to some overhanging tree and scrambled down to level ground. This creature long remained a mystery to us.

By obstructing and turning aside the gentle flow of the spring, the soft, smooth, muddy floor of one of the pools was each evening uncovered, and on this telltale mirror of earth the animals which passed in the night, on their way to drink, registered their every movement. Raccoons and deer we easily recognized, but several sizes of true bear-like palms confused us. We knew also that no coyotes or Mexican dogs were thereabouts, although here were tracks to put our knowledge to naught.

By tempting with the skinned bodies of birds and with bits of refuse food placed on a certain boulder, we gradually won the confidence of all the more wary

creatures of the night, but we did not attempt to observe them until, for some time, they had drawn upon these supplies. Then we set ourselves to watch.

Shrill little squeals have often wakened us at night, and now the little black and white creature which is making its way so stealthily through the leaves gives utterance to this strange cry. The moonlight is bright

RING-TAILED CAT

and every detail is plain, as the animal leaves the shadows of the underbrush.

Its motions are quick and cat-like, its ears small and

erect, surmounting a tiny face like that of some little gnome of the woods. Mouth and nose are pointed, eyes large and lustrous, glowing round and deep in the pale light. But what the gorgeous train of feathers is to the peacock, its tail is to the Ring-tailed Cat. The creature stands half crouching, listening to all the night sounds, when suddenly its tail appears, — no bare opossum-like affair, nor even like the more fluffy appendage of a raccoon, but a great filmy mass, ringed white and black, curling and furling gracefully over and around the little animal. Now the hairs lie close and the tail narrows, again it expands and fluffs out larger in diameter than the entire body of the little cat.

Here the Ring-tailed Cat, or *Bassariscus*, — for he seems to have no generally accepted common name, — comes and goes, taking bits of meat to his family somewhere up among the rocky cliffs. He is a full-grown animal and yet his tiny face has a wistful, almost infantile expression. How interesting must be the baby Ringtails! But the innocent expression of these little fellows is only skin deep. Great is the havoc they work among the sleeping doves and other birds which roost near by. They are somewhat like the raccoons, but are much more active and cat-like. Among the branches they are at home and can run up a tree-trunk like a squirrel. A strange habit is that, like the Iguanas, they sometimes leap from high limbs, crashing down

among the dense underbrush. The first few times this happened near our tents, we looked out, fully expecting to see that the animal which had leaped to our camp niche, was as large as a Jaguar.

The Ring-tailed Bassariscus is interesting on account of its relations to the raccoons. A study of its skeleton shows that it is almost identical with certain fossil dog-like creatures which lived during the geological age known as the Oligocene, perhaps over a million years ago. These animals of ancient-days were the direct ancestors of the modern raccoons. So it was a hint of the far-distant past which squealed and leaped about our tent at night. Through all the centuries, this little animal has preserved the structure of its ancestors, changing but little down to the present day.

It was a rather odd fact that all the creatures which inhabited the caves of the *barrancas* had tails ringed white and black; — the upturned tails of the Canyon Wrens, the coons' tails, the owls', and the remarkable appendages of the Ring-tailed Cats.

Within a few days after our tents were pitched, they were accepted by the wild creatures as perfectly natural additions to their little world — perhaps an upheaval of whitish volcano stuff. At any rate they voted the canvas roofs great fun, and the curious creatures within as harmless. The moonlight shone through the tent upon us, sharply silhouetting every branch and

leaf. Wild mice ran and squeaked about the edges of the tent, holding an orgy over the supper crumbs. Some great night insect would come with a buzz and a thud against the sloping top, and crawl clumsily to the ridge, from which he would take heavy flight. Every leg and claw was distinct in his shadow silhouette, as he climbed upward. Now a long-drawn squeak came, and the tent shook as a little mouse-like form alighted on the apex. These flying-squirrels, or leaping-mice, — for we never succeeded in getting a good look at them, — must miss the smooth tent slope down which they so loved to slide. To us, their frolic showed a dark, sprawling, shadow-mass gliding swiftly down the tent roof, and shooting off down the hillside.

What a difference results from the various ways of looking at things in this world! To us, our camp was an ideal little home, comfortable and all-sufficing. The sixteenth of an inch of canvas wall shut out the great world, or rather shut a tiny portion of it in, and behold, all wildness vanished! This little rooty space — ten by twelve feet — might have been trodden by us for years, and by our ancestors for generations, so familiar did it seem after a week's inhabitance. But to the squirrels, or mice, or whatever they were, here was a most fascinating "chute," — a run, jump, and slide, — which ended in a veritable paradise of biscuit crumbs.

THE NOISY AND THE SHADOWY ONES

The most noisy of all the creatures which visited us by night were the armadillos. Skunk-like, they deemed themselves well protected, albeit in another fashion, and they scuttled through the bushes and vines with no precautions for silence. A wild steer could make his way through thick cover with less commotion than could one of these armoured pigs — porcine in the taste of their flesh and in their actions and their snout, if not in nomenclature.

Again and again, while coming to camp at night or in the dusk of early morning, a *something* would pass and vanish from our path. At first it seemed like a momentary flicker of an eye muscle or a trick of the moonlight. But before long we realized that there were wild creatures, — of large size, too, — which moved like shadows, too swiftly, too silently, too much the pale hue of the moonlight, for our senses to follow and distinguish. "*Ellos son los animos de los muertos*," and the Mexican shivered at the thought. But we were incredulous. We determined to see more of these "spirits of the *arroyo's* dead," if such things were.

So night after night we watched, and night after night revealed nothing. Yet, if we dozed but a moment, or if a clumsy armadillo drew away our attention, the bait we had placed was gone — vanished. And next day Ricardo shrugged his shoulders and his "*Quien*

sabe!" had more of an I-told-you-so accent than ever. But sometimes the faintest of dog-like tracks remained in the sand at morning.

As with many mysteries in Nature it was when we ceased to think of it that it was solved. One evening, during a week when the moonlight made useless our candle-lanterns, and the trees and bushes and rocks were enveloped in the pale fairy light from the luminary which seemed suspended so close over the *barranca's* summit, we found the solution to our mystery. The air seemed too full of light to stir — we in the North do not know what real moonlight is. In the silence I could count each beat of my heart, and soon the rhythm increased in volume and, without abruptness or knowledge of the change, I was listening to the *beat-beat-beat-beat* of the Ridgway Whip-poor-will.

The spell of the silent night, the rise and fall of the volcano's fire, and the eternal monotone of the bird held me spell-bound, until my body seemed but part of the quiet whole. Never have I stood so still in my life. Every nerve and muscle seemed at rest. Instead of a novel sensation, it seemed as if I had stood there for ages. Like Atlas, there would soon spring up trees between my feet.

Before me was the grayish-white sandy bed of the *arroyo*, with its scattered boulders, shadowless because of the zenith moon. The misty path reflected a cool,

velvety light. The texture of the sand seemed soft and loose.

Suddenly, fifty feet away, a spot of sand seemed to shift and move and flow along, winding, sinuous as a snake, around the boulders. Only my mind started, alert at the sight. My body was as immovable as the rocks. I knew that *this* was no *animo;* the mystery, intangible, yet not disdaining a nightly portion of the food spread for it.

Not until the something came many feet nearer did my eyes make out the outlines of a Gray Fox. No more wonderful resemblance ever existed between an animal and its surroundings. The ghostly creature moved so close to the ground that it apparently cast no shadow. From head to tail, not a distinguishing tint or mark was visible, — all gray, gray, — a sand wraith in fox form. Suddenly, from nowhere, a great vulture swooped low over the sand. What could ever escape his eye! And when the swish of his wings and his shadow, blacker than himself, had passed, the fox was gone, — as if it had melted to nothing or sunk into the sand.

Five minutes passed, the fox moved, and my eyes again found him. He glided to the remains of our venison supper, stopped, looked straight at me and knew me for what I was. Back on his trail he turned, and glided swiftly from view into the darkness of the *arroyo*. Something drew my head around and there, behind the

camp, a brother fox, with a mouthful of provender, was stealing noiselessly up a loose gravel-bank into thick cover. With any other creature the bank would have given way, sending down a shower of sand and dried leaves. In the morning a few dog-padded prints verified my vision of the preceding night, but a breath of air soon blew the light sand into the tracks — so carefully does Nature protect her children. And thus was solved the mystery of the mud tracks near the pools.

Nothing but a fox after all! Oh, but such a fox! As different from our Reynard of the North as a lithe greyhound is from a bungling terrier. And when we captured one, he proved to be the Guatemalan Silver-gray Fox, and examined by daylight, how different he seemed — slinking, cowering, trembling, begging with fearful eyes for the moment when we should set him free again. For what was his skin to us compared to seeing the convulsive leap of joy with which he returned to his life of wild freedom!

The colour of this fox in the broad light of day was very different from what we had supposed it to be. A grizzled silvery gray was the predominant hue, but in the pale, all-absorbing moonlight, no hint of the deep rufous or the black markings was ever to be detected.

Thus, little by little, we came to know the wild kindred which shared this *barranca* with us; like us, drinking of its waters, gazing at the soaring of

the vultures, listening to the rumblings of Colima and watching its smoke and flame; hearing the hundred voices of the dawn, the evening, and the night.

NINE-BANDED ARMADILLO

CHAPTER XI

ALONG THE STREAM OF DEATH

WE learned that the dried-up stream-bed, at whose junction with the *barranca* stream we camped, was known by the sinister name of *El Arroyo del Muerte*, — The Dry Stream of Death, — and the name was well given; not, however, because of any lack of life along its sinuous course, even during this dry season of the year. In years past, its winding stream-bed was much used as a short-cut trail, and mule-trains of fifty and a hundred animals often passed and repassed through it. At the beginning of the rainy season, somewhere up on the volcano's slope the water would collect, held back by débris, until the great weight broke all barriers and the flood poured, like an avalanche, down the *arroyo*, carrying away men and animals, like mere chips in its seething waters. Hence the appellation *del Muerte*.

But the rainy season was yet far off, and we found the recesses and dark defiles of this dry waterway a most delightful place for exploration. After the summer rains cease, the annual torrent dwindles to a mere trickle, and even this at last filters through the porous

sand. No sooner has the water disappeared than the life of the neighbouring banks and of the jungle, stretching back on each side, begins to encroach on the water-worn trail, and at the time of our visit plants have sprung up, flowers bloomed, and the creatures of the wood and air use it as a convenient path to the water in the great *barranca*.

The lower part of the *arroyo* is wide and the sides slope gently outward, but a little distance farther up it makes a sharp bend and narrows quickly ; from there onward its dark recesses are luxuriant with vegetation, isolated from the outside world, and greatly beloved by the wild creatures.

In the lower reaches of the *arroyo* we saw for the first time a gray and black bird which has no common name but was most interesting to us as being the first member, that we had seen, of the great tropical family *Cotingidæ*. To this family belong birds noted for their marvellous colours, crests, or voices, such as the Cock-of-the-rock, the Umbrella-bird, and the Bell-bird. This Frog-bird, as we nicknamed him, had none of these characteristics to distinguish him, although his plumage was rather attractive — a pearl-gray body and tip of tail, with black flight feathers, tail, and face. The female, however, had no black on the head. We may call it the Gray-headed Tityra (*Tityra personata griseiceps*). The broad bill, naked skin on part of the face, clumsy body, and hoarse croaking were the reasons

for our comparing these birds to batrachians. These, like so many other birds in this country, were always seen in pairs.

Tropical foliage cannot endure the heat of the sun on these dry, sloping *arroyo* walls, and if we climbed to the top, we passed only mesquite and cactus — the broad-leafed nopal and the stately organ, or candelabra cactus. The latter sometimes grow to a great height, symmetrical and dignified, the deep-ribbed spiny branches each pointing straight upward, with no foliage to flutter, no leaves to fall. The wind makes no murmuring, no sighing, among these strange growths. The thick stems lay up a great store of moisture in their spongy cells, not for a "rainy day," but for a rainless one, for the months when not a drop falls. Here was really a little desert of a few acres' extent, set in the midst of tropical greenness; for below, the springs kept the vegetation ever luxuriant.

Woodpeckers and other birds had bored their round holes in the cactus branches, and they doubtless nested there later in the year. Beneath them the Roadrunners loved to run and leap and watch for lizards; here also the great lazy Iguanas had dug deep burrows in the sandy soil. Once I surprised and seized by the tail a big fellow, basking in a clump of tall grass, where he could not observe my approach. I felt as if I had grasped a prickly, animated, steel spring, and my strength was almost gone, when there was a sudden

relaxing of the strain and I fell backward, while the Iguana shot ahead into a steep hollow among the rocks. I had nine inches of tail in my hand and the Iguana seemed not a whit discommoded by his loss. After a hard struggle I secured him and kept him still long enough to photograph him, together with his discarded member, after which he rushed rapidly off to his hole. The entire reptile measured twenty-eight inches, and we realized that he was thus able to cast off one third of his entire length with impunity.

This breaking off of the long tails of lizards is a most interesting process, besides being of the greatest value to the creatures themselves. Before an Iguana emerges from the egg, its skeleton is not bony, but formed of a jelly-like substance which soon becomes of the consistency of hard gristle. This is called cartilage, and later, when the true bone is deposited, a wad or pad of this cartilage remains unossified between each of the vertebræ, forming the backbone. This is true of almost all the higher animals, but, in the tail-bones of the Iguana, a little wedge of cartilage is found, extending almost across the centre, or the *centrum*, as it is called, of each bone. This, of course, causes a great weakness of the whole bone, and if such a condition existed in the upper back or neck, it would, indeed, be unfortunate for the lizard. But in the tail it proves an admirable safeguard. Here the muscles are very thick and short, and opposite the centre of each bone, and

they dove-tail into one another. So now it is clear that, if an enemy — myself in this instance — grasps the tail (which is the last exposed part of the animal as it dives into its hole), the violent struggles of the Iguana are sufficient to complete the crack which the wedge of cartilage always holds open, and the short muscles, slipping from their dove-tailed positions, give way, and thus separate the *Iwana* — as the Mexican tongue pronounces it — and his tail!

If this were all, an Iguana could have but one such chance of escape in his life, and if the break came *between* the tail-bones instead of *across the middle* of one of them, the creature would indeed go curtailed through life. But by another kindly provision of Nature, the exposed cells immediately begin to grow and before long, behold, a new tail! But in reality a sham one, for from the stump there grows out a long, unjointed rod of cartilage, not bone, with but few muscles, and skin which is covered with very small spines. But little the Iguana cares about the internal structure of his new appendage; the fact that it is there, and may again be cast off in case of dire extremity, is all sufficient to him. It is a most interesting fact that, as the newly regenerated rod of cartilage recalls the condition of bone in the embryonic state, so the more simple arrangement of spines on the new skin sometimes harks back to an ancestral condition. The new tail thus bears upon it the shadow of the distant past.

It was evident that, before my attempt to capture the Iguana, he had once been assailed, perhaps by hawk or eagle, and his tail broken off. The new

BROKEN TAIL OF IGUANA

scalation is plainly shown in the photograph, two joints below the second break, — fully seven inches of the nine which came off in my grasp being sham tail. Soon the break heals over and the new growth begins to push out.

The adolescent cells in the exposed wedge of cartilage are so full of life and tail-making vigour that the renewed member is sometimes double, or even triple.

Indeed, if the remaining tail-stump is slightly injured on top or on the side, a tiny extra tail may shoot out, where it is never meant to be.

Scattered among the cactus and under the boulders were burrows larger than those of the Iguanas, and in these lived the quaint Nine-banded Armadillos. Occasionally our Mexican dug out a young one and we varied our bill of fare with his tender flesh; but the tough, older ones we caught, watched, and freed again.

Very rarely one may come upon an armadillo, as we did, asleep before his hole, sprawled out flat upon the earth, his little pig eyes tightly closed, his tail stretched straight out behind. But the long, delicate ears stood stiffly upright, giving a ludicrously alert aspect to his otherwise inert form. A pebble crunched into the sand under our feet and the sharp ears carried the warning, and, with a single glance, the little animal turned with surprising agility, and literally hurled himself into the entrance of his burrow. An armadillo seems absolutely defenceless when cornered and never thinks of anything but escape. When once his powerful claws have opened a way, even but a few inches, into the ground, it needs a strong pull to dislodge him. There are no weak joints in *his* tail!

From head to tail the scaly armour protects the armadillo; his shoulders and haunches are each encased in

a single inflexible piece, while nine bands about the centre of the body save him from the immobility of a turtle. What a strange creature! We might imagine that *Tatu*, for some crime, had been condemned to forsake the appearance and activity of the fur-covered animals and simulate the scaly creatures of the dust. One cannot help comparing the armadillos with the Iguanas. Science, however, allows us no such imagery, and, with ruthless scalpel, proves the former's kinship with sloth and ant-eater. The armadillos hereabouts were certainly neither solitary nor exclusively nocturnal, and we often saw them vanishing into their holes at midday, as we came suddenly upon them, although they were also found foraging at midnight.

After capture, an armadillo scorns to seek protection by rolling up in a ball. We very much desired to photograph one thus, but failed to do so. We spent several hours in rolling one into a close sphere, but the aggravating creature as often promptly unrolled and made off.

THE SUMMIT AND EDGE OF THE LITTLE DESERT

A few steps upward from the zone of Tatu and Iguana burrows, and we were upon the crest of the *arroyo* wall. The level plain in front of us was fretted with dark, sinuous lines — the wooded edges of deep narrow *barrancas*, tracing the course of streams. In the distance Colima stood as ever — two peaks, deep,

shadowy blue, against the paler blue of the sky. From the living cone a line of white smoke wreathed upward and drifted toward the other peak, where it dipped and drifted about the snow-capped summit, merging its soft filminess into the glistening snow.

All about our feet, and in many other places around our camp, grew clumps of the little club-moss, known as the Resurrection Plant. We had often seen it sold in New York and wondered where its home could be, and here we found it, clinging in thousands to the scanty film of parched earth in the crevices of the boulders and cliffs. Each plant is like a little incurved ball of *arbor-vitæ* foliage, dry and brittle, but when placed in a spring or a pool of water, it opens wide its little array of leaves, which, in a day or two, turn from brown to green and send forth a spicy perfume. A bucket of water thrown among a multitude of these plants awakens into a brief greenness every one upon which it happens to fall; but soon, unless kept moist, the little leaves close and return to their parched condition — the little brown fists are clinched again.

Descending the *arroyo* wall obliquely, we continued up the dry canyon, and at the very edge of the desert patch, we came upon the first closed wasp's nest we had seen. Among the mesquites of the Guadalajara country, the wasps built their combs exposed to the light and air, but here, on the low cactus-pads, they made round paper structures, with a single entrance

at the side. The yellow-bodied little workers were but half an inch in length and their home eight inches in diameter, but when a lizard unwittingly crept with short jerky advances upon their cactus-pad, jarring their nest, the tumult was such that we fled for our lives.

Here, at the edge of the open, the Western Mocking-birds loved to perch and whisper their songs. None were as yet full-voiced, but all were practising, and as one passed a low thorn-bush, there came to the ear a harmony, — low and blended as if from a great distance, — and there, within a dozen feet, was the gray and white mastersinger.

As we entered the more luxuriant growth along the stream-bed, the character of the birds, insects, and plants was wholly changed. The dull-coloured inhabitants of the sandy country were left behind, and here bright tints and green hues prevailed. A blossoming tree, which we found very abundant throughout the *tierra caliente*, was the *primavera* of the Mexicans, so called from its early spring blossoms (*Cochlospermum hibiscoides*). Although yet leafless, its branches sent forth a myriad bell-shaped blossoms of brightest yellow, growing in such profusion as sometimes to form one solid mass of colour. Amid these we found a very diminutive hummingbird, nameless to us, green and white, with a lavender throat and a black streak through the eye.

LIVING MOSS, SUNLIGHT, AND LEAVES

The *arroyo* now narrowed to one hundred feet, and tall trees cast a refreshing shade. Here and there a spring oozed from an overhanging ledge, trickled a few yards, and disappeared in the sand. Moss and lichens clothed the face of the cliff, and air-plants and orchids hung gracefully from the rocks and branches overhead; the mouths of gloomy hollows and caverns now and then darkened the mass of verdure. We selected a cool, shady defile, and, relieving ourselves of cameras, gun, and insect-net, we explored the little glade around us. Convolvulus blossoms — scarlet and blue — brightened the shadows, and in lighter spots a species of beautiful flowering-grass, not unlike the Pampas grass of florists, grew luxuriantly.

Several times I passed two or three patches of what I took to be dense growths of a brown hair-like moss, springing from an overarching bank of turf. In attempting to pick a blossom almost out of reach, my hand came in contact with the moss and to my surprise it began to *scramble away!* A second glance revealed the truth. Thousands of Daddy-long-legs had gathered in this limited space, clinging with their jaws close to the earth, while all their legs dangled down and outward. When quiet returned to the mass of little creatures, not one of their bodies was visible, nothing but thousands upon thousands of thread or moss-like legs hanging free. The photograph shows a few indi-

viduals on the outside making their way back into the general mass. A week later, when we again visited this spot, the "Daddies" were in exactly the same place and position.

Such a remarkable protective scheme was worth a whole day's search, but the *arroyo* fairly showered marvels upon us. While walking up the dark ravine I saw, to my amazement, four flecks of sunshine dancing slowly ahead of me, although, at that moment, not a breath of air stirred the branches. I could make nothing of it, until I enclosed the flickering spots in my net. Only then did I see that they were four yellow

DADDY-LONG-LEGS MIMICKING MOSS

and white markings, one at the tip of each wing of a large dragon-fly. In the dim light of the ravine, the rest of the wings, transparent and colourless, and the long,

THE INVISIBLE DRAGON-FLY

attenuated body, were absolutely invisible, leaving to the eye only four small golden spots, which would ordinarily be lost among the myriad dots of sunlight. For an insect of its size ($4\frac{1}{2}$ inches in spread of wings, and

with a body 4 inches in length) the protection was the most perfect I had ever seen. To photograph the dragon-fly I had to pose it in the brightest sunlight, thus giving no idea of the wonderful illusion which a deep shadow produced — when the wings vanished, the body became a slender twig, and only a single spot of yellow, where the wings overlapped, told of its position; a hint so intangible that it must be safe, even in this land of keen-eyed, insect-eating birds, mammals, and reptiles.

The most wonderful protective scheme of all was shown in the Leaf Butterflies (*Tagetis mermeria*), which were not uncommon in the more shady glades of the Stream of Death. Again and again we returned to watch and wonder at them; each time to find some new adaptation, each time to mistake them at first glance for falling leaves.

A LEAF BUTTERFLY

Each individual butterfly had a range of fifteen or twenty yards up and down the dry, rocky

bed, and day after day each might be found in its particular haunt. Every insect was different from its neighbour, noticeably so, even on the wing. Some were much larger than others, some darker, some strongly mottled with gray spots. This remarkable variation seemed concomitant with the resemblance to the variety of hues and mottlings which exist among dead and withered leaves. When one of these butterflies was in flight, one could not catch a glimpse of the upper surface of its wings, so quickly were they snapped together.

The sustaining power, gained by the momentum of this instantaneous downward drop and momentary opening of the wings, was expended in a visibly balanced second of rest at the end of each flap, just as a dead leaf shoots and eddies, slides and twists in its fall to earth. Not only this, but when the insect took to wing it shot almost straight upward, and instantly attained the highest point of its flight. From here to its place of alighting, its course was a gradual descent — this living leaf unconsciously reflecting every detail of the fall of the withered bits of vegetation. And further, when the butterfly alighted, it was not with a fluttering and a few moments of hovering, but as a leaf comes to rest, so the insect — a sudden drop to the very ground, wings snapped together, and the apparently dried, worm-eaten leaf leaned far over to one side and swayed with every breath of air. Day after

day we saw the same performance, the little creatures evading the sunlight, guiding their careless flight so that its course followed the darkest ways. *Señorita's* corduroy walking-skirt was just the shade of some of these golden brown butterflies, and many times their flight ended upon the dress, their selection of it again and again arguing, in their many-faceted eyes, an accurate power of appreciation of the shades of colour.

THE HOME OF THE SOLITAIRE

We continued still farther between the contracting walls of the *arroyo*. The great boulders, around and under which we picked our way, were rounded and worn smooth by the force of the great torrent which, for six months of the year, surges over them. Now, double lines of leaf-carrying ants passed dry-shod across our path. In the finely ground sand-bed the treacherous pits of the Philistine Ant-lions were hollowed. Wasps plastered their tiny pellets of clay or wood pulp against the rocks, where, in a few months, a devastating tide would surge. The hungry fish in the *barranca* streams below must fare sumptuously after the first rains. We passed side tributaries, streamlets, *arroyitos* the Mexicans would say, and occasionally, where a sharp turn occurred, the sheer walls narrowed until we could span the gorge with our outstretched arms. Little vegetation grew here, for the water swept the sides too clear of earth, and even far

above our heads the volcanic rocks were scoured smooth. Here the sunlight never entered, and black lianas hung down from far overhead, twisting and knotting around each other, where they touched, like the Dantesque serpents of some frightful "round" of Purgatorio.

Wherever a ledge or a more gentle slope gave foothold, luxuriant vegetation crowded it; gigantic *Agaves*, or Century-plants, variegated with white, starred the walls; purple-leafed orchids, and now and then a dangling tangle of Night-blooming Cereus, the spiny stems looking like nothing so much as colonies of monstrous hydras, tentacled and budding. Where the drip and splash of ice-cold springs were heard, mosses and ferns abounded, delicate maidenhair, with fronds two and three feet in length, forming arrowheads of filmiest green against the black moist cliffs. Saxifrage (etymologically, if not botanically) lit up the glades with myriads of white stars, filling the whole air with sweetest fragrance.

In such a setting we found that most exquisite of birds — the Painted Redstart — in abundance. Not a chirp or warble did they utter, but dashed silently to and fro, flaming out in the dark ravines — visions of black, scarlet, and white.

Not a sound broke the silence, save the gentle tinkle of water falling upon water. Without warning, from the green depths at one side, there came several notes,

creaky and harsh in tone, and suddenly these seemed to melt and run together into a volume of marvellous sweetness. The plaintiveness of the pewee, the tinkle and gurgle of the bobolink, the rich liquidness of the wood thrush; all these characterized it, but it differed from all, excelling the songs of all other birds in depth of feeling and sweetness. It was the mystery and beauty of these tropical ravines embodied in song. Such was the song of the Solitaire, one of the marvels of Mexico, for which we had hoped. It came and died away before we realized what we had heard. Breathless, we strained our ears and soon the first low creaking notes separated themselves from the tinkling of the falling water, and again they merged into the grand *ensemble* of musical tones. Solitaire he seemed in reality as well as in name, but soon, from the next turn in the *arroyo*, came an echoing sweetness and at last, fainter, as from a great distance, a third took up the incomparable theme.

It was a song impossible to describe — a gradually ascending strain of interlacing, silvery notes, the tinkling melody rising, as rises the sound of a crystal vessel filling with water. We lay on our backs and searched the shadows overhead, but to no purpose. Suddenly the melody broke out straight above us and there, in a tangle of lianas, perched the Solitaire. His head and body were firm and steady and only a trembling of the throat revealed the source of the song. In

no other bird is an equal volume of sound produced with so little effort. The compensating law of Nature allots to this matchless singer a simple Quaker garb of brownish gray. He made us think of a catbird with a ring of white about the eye.

While we listened to the *Jilguero* (Heelgáro), as the Mexicans call him, all other songs that we had ever heard seemed insignificant. The melody of the bird seemed born of the rustling winds and the murmuring waters. Now and then he plucked a small berry from a twig near him, but his song grew no less clear, as he uttered it again and again. When the last berry was gone, as suddenly as he had appeared, the Solitaire flew straight back into the depths of his secluded home.

TROPICS AND PINES

In another place, where the *arroyo* again shallowed and widened, the rank vegetation grew down to the very brink of the phantom waters. Birds and other creatures had concentrated here, where feathery tufts of bamboo, and trees bearing a fruit like small oranges, were scattered among countless varieties of bushes, vines, and trees, nameless to us. An ever-to-be-remembered five minutes came to us, when the very floodgates of life were opened. From our rocky seat, *Señorita* and I marvelled at the sudden abundance of living creatures, appearing and passing so quickly that only the stenography of the mind could note them at the

moment. An Iguana, black as night, shuffled along a narrow ledge of rock, fifty feet above us, and scrambled into its hole, flicking off a pebble with the last wriggle of its disappearing tail. The pebble came bounding toward us and fell with a clatter at our feet. In its descent it started a pair of Painted Redstarts, which flew away with silvery chirps, and a Pileolated Warbler and a Xanthus Ground Sparrow dashed away down the *arroyo*, dodging swiftly among the trees.

Two diminutive Sinaloa Ladder-backed Woodpeckers made a great clatter near by, one drumming on a dry resonant tree-trunk, and its mate tapping a swaying rattle-seeded bush. A Pitangua Tyrant flew over, and, looking down, screamed its hoarse *tear-r-r!* at us. And now events followed one another even more quickly. A large-winged white butterfly, twice splashed with yellow, floated past, and a hitherto unnoticed Solitaire darted at him, almost in our faces. The bird missed its aim and was instantly pursued by a splendid Copper-tailed Trogon, all brown, rose, white, and black. Both birds dashed about, in swift flight, for a few minutes; then the former disappeared and the Solitaire, alighting about ten feet away, burst into his song, sweet and measured, with no hint of breathlessness. Before he had half finished, eleven great macaws whistled low through the branches, almost fanning our faces with their wings, all uttering the harshest of shrieks when they suddenly perceived us. During all

this din, the liquid, chain-like melody of the Solitaire held true, cutting through the macaws' terrific cries like a shaft of clear light through the darkness. Two bird voices more antithetical probably do not exist, and the birds themselves present as strong a contrast, — the gray thrush with its delicate bill opened ever so little, and the gaudy green macaws, scarlet fronted, with huge yellow mandibles wide agape!

All passed in a moment, but our glance remained upward, and far up, across the narrow strip of blue sky which roofed the *arroyo*, two vultures and a Caracara Eagle passed in their circling flight. A Black Hawk, which had been perched in a niche of the cliff, now took to wing with an echoing cry; a White-fronted Dove whirred past our resting-place; and a velvety Heliconia butterfly waved its way slowly up the defile. Then a great peace settled over the little shut-in bit of world, and for many minutes we sat there, marvelling upon the beauty and wonder of it all.

Far up in these isolated defiles we found that the trogons spent their days, while at night, as we had seen, they came to the river to drink, and roosted not far from its waters. The habits of the White-fronted Doves were almost the reverse of this, as we suspected when we noticed the flocks passing at evening up into the lower *arroyo*.

As we made our way up the *arroyo*, we were hardly conscious of the gradual ascent, but a steep climb to the

top of one wall showed that the pine forests of the volcano's slope were close at hand, and that we were many hundred feet above our camp at the level of the *barranca* river. Soon the openings to the sky were framed in long, graceful pine-needles, and when the stream-bed became too narrow for comfortable walking, we took to the woods at the higher level. The transition zone was uninteresting and seemed to offer attractions to but

THE PINES OF COLIMA

few creatures, but when the dense pine forest replaced all more tropical growths, the sudden change in the character of the fauna and flora was remarkable, and trusting only to our ears, we might have believed ourselves at home in the North in early spring.

An hour ago and we were in the tropics, among trogons and macaws; here the notes of bluebirds came to us, and we found that it was the very same bird as that of our Northern orchards. A faint goldfinch-like note had some unfamiliar quality, and its author, though goldfinch-like in actions and flight, was a black-headed, green-bodied little bird, which we must call the Forrer Siskin. *Bob-White!* rang clear and bold through the pines, though the birds would not allow us to approach them. There were many species of birds keeping to the very tops of the tallest trees, which were so wary that we found it impossible to identify them. Audubon Warblers were abundant, and here they were in full spring plumage, while those at lower levels, which we saw daily about our camp, were still clad in their dull winter dress.

But this forest of long-leaved pines was too near the tropics to be entirely boreal in its nature, and the Thick-billed Parrot, the only species of its order which finds its way across the Rio Grande into the southwestern part of our own country, was here tame and abundant among the coniferous trees. It is either a very stupid bird or controlled by its curiosity, for the flocks fol-

THICK-BILLED PARROT

lowed us everywhere as we made our way over the slippery ground. The fatigue of walking among these pines was very great. The ground was carpeted with the smooth, slippery needles, and everything, the trunks of the trees, the needles, and soon our clothes and camera were thickly coated with the white ashes falling from the active volcano, whose dense outpourings of white smoke were visible above the trees ahead.

SUNSET AND MOONLIGHT

The afternoon was quickly passing, and we hastened to turn our steps toward camp. We returned by a shorter route, cutting off the great bend made by the *arroyo*, and passing through a small village where a few Mexicans dragged out their lives in this isolated region. Poverty-stricken and ignorant, they were yet hospitable and kind. Their little 'dobe chapel (for they were too poor to have a church) was ornamented with tattered and dirty ribbons, which were once bright-coloured, and with begrimed and faded bits of tinsel. As we approached, a crowd of about fifty people, the entire population of the village, were gathered before the chapel, singing a wild but not unmusical chant, which might well have been derived from some heathen rites of the aboriginal Indians. We found that it was a *fiesta — la fiesta grande!* For had not the Virgin been brought from some distant church to honour them by a visit! The men had carefully carried the life-sized wooden image upright on a platform, mile after mile, up and down the rugged *barrancas* and over the hot plains; and eight men had taken turns at transporting a pitiful little worn-out organ, wherewith to accompany the chants to the Virgin. And now they were as happy as children, worshipping and praying, and beginning to feel the first effects of the *pulque* — the drink which plays so prominent a part in all their *fiestas*. We refused the unpleasant national beverage, but indulged

in some delicious *nieve con lemon*, — an attempt at ice-cream, — made from the snow which some patient *hombre* had carried on his back all the way from the distant crater of the snow volcano. Followed by the chorus of "*Muchas gracias, Señor; Adios, Señorita,*" which a few silver coins aroused, we left them, and the weird rhythmical chant once more rose and fell on the evening air.

Descending again to the bottom of the *arroyo*, for fear of losing our way on the monotonous, pathless plain, we were plunged for a time into almost complete darkness. After the brief tropical twilight the sun was blotted out with strange abruptness, but a beautiful moon soon shone upon our path and our eyes adjusted themselves to the strange, soft light.

Many of the small flowers were now tight closed in apparent sleep, but the most beautiful blossoms of all opened almost before our eyes. While yet some distance away, the graceful, tapering petals of the Night-blooming Cereus shone out fair and beautiful in the moonlight. The out-curving petals expand four or five inches across, surrounding a multitude of thread-like stamens, which spring, rank upon rank, from the centre, delicately graduated inward, so that the long pistil is the focus of a thousand yellow pollen-heads, which rise, amphitheatre-like, around it. These flowers grow on stalks six or eight inches in length, and yet the ovary is at the very base, and the stalk is a hollow

tube, within which is the slender white style. Only for a single night do these beautiful flowers open, and what is a tightly closed bud at dusk may be a full-blown blossom an hour later. By watching carefully, we plainly detect the motion of the expanding petals.

The delicious perfume from a cereus flower can be detected many yards away, even by our dull senses, and it must, indeed, be a potent summons to the keen-sensed hawk-moths and other insects upon which this flower depends for fertilization during its brief season of perfection.

Strange sounds come to us upon our moonlight walk; mice scurry from our path, a flying-squirrel, or some small furry creature of great leaping power, passes through the air. Throughout a quarter of a mile of our course a sound reaches us, almost continuous in its mysterious rhythm; a noise as of a mallet striking on wood — *thump-thump! thump-thump!* Whether from bird or beast, it will ever be to us an unsolved voice of the night.

As the hours pass, the tension of the silence and the dimness becomes greater; every sense is quickened and alert, not a rustle of the dry underbrush or a swish of wings overhead escapes us. Some creature coughs — a sudden painful choking sound, and we start, as if it were a gun-shot. The feeling that a myriad of watchful eyes are upon us is irresistible. They seem to peer out from each hole and cavern — eyes more keen than

ours. We leave the *arroyo* and climb up a steep ledge, which will cut off a half-mile of winding stream-bed. A single dead mesquite crowns the narrow summit, and on its topmost branch a full-plumaged Caracara Eagle sits erect and watchful, his outline silvered by the clear moonlight. He seems not to notice us as we pass beneath.

Pausing a moment, on the narrow summit of the dividing cliff, we watch the dull glow above the crater of the volcano. It is quiet now, after a few days of more than usual activity. Its lurid reflection is the wildest touch in this landscape of black chasms and shadowless plains. A strange cry comes from some bird of the night high overhead, and as we are about to resume our way, a muffled sound comes from the great *barranca* far to our left, — a sonorous growling roar which rises to a scream, — cut short off. It has been described to us by some American miners, and now we know it instantly for the cry of the jaguar, a sound new to us and setting every nerve a-quiver with love of the wilderness, — a love which, after all, is but slightly "sicklied o'er" with the veneer of our civilization. Few of us are without this feeling.

Descending on the other side into the *arroyo* again, we leave the silent Caracara still motionless, keeping his midnight vigil. As we brush through a dense line of bamboos and willows, we startle a Canyon Wren. It flutters away, and in its excitement breaks into

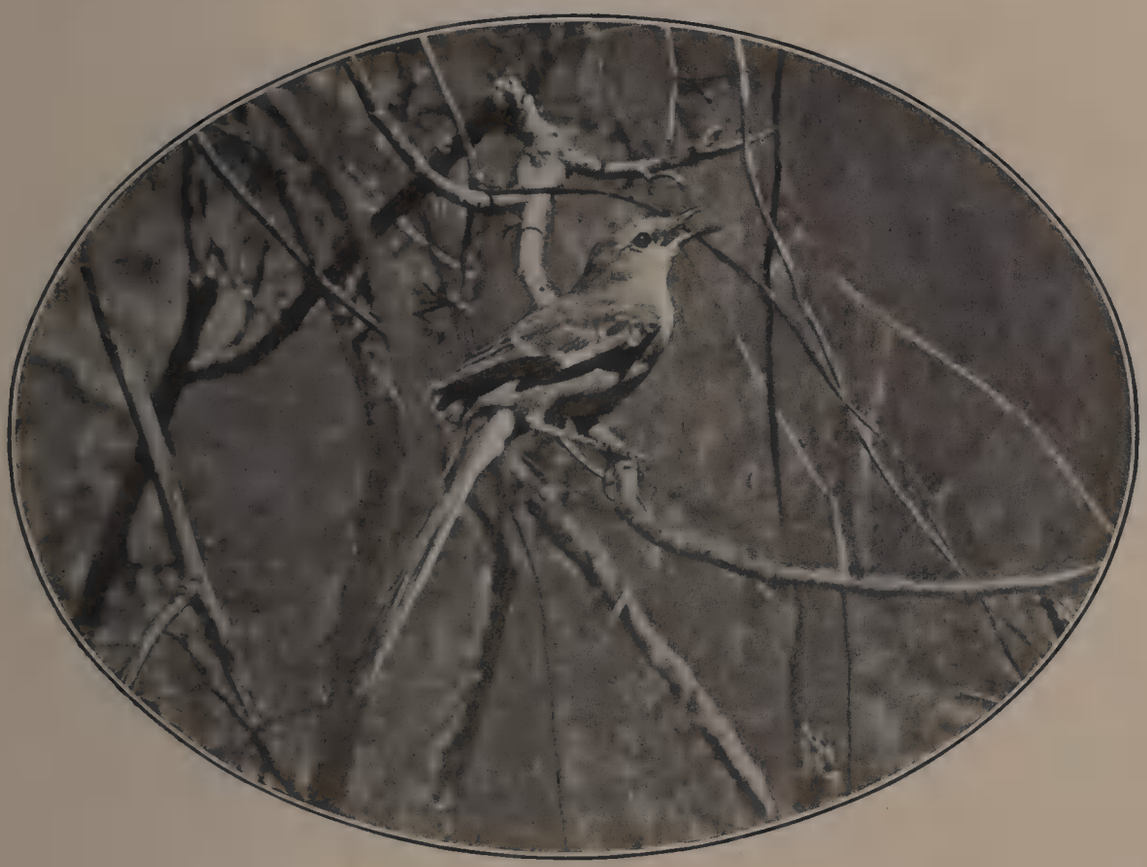
silvery song. The boulders are less frequent now and the velvety, yielding sand strews our path with silence. Something crackles and pushes through the bushes ahead of us and we stop motionless. Two Mexican Deer walk down the steep slope and then turn riverward. Some instinct, born of their alert, wild life, impels them to turn and look at us, and there we stand, almost afraid to breathe, lest we startle them. Our hearts seem to beat audibly, our pulses to click. The deer stand as if cut in stone, twitching not a muscle. All their being is straining through those four large eyes — those quivering nostrils. Is it life or death which they see?

The strain becomes unbearable and we step forward. Eight tendons snap, and lift the deer high in air. Two white tails shine out, and leaping from ledge to ledge, the two animals go up the hillside, sailing smoothly, swiftly, among bush and crag, until they vanish in the dimness of the larger growth.

Armadillos scurry heavily, like little overladen tugboats, across the river of sand, and more than once a fox drifts noiselessly into its hole. We pass the tangle of white seed-fluffs where we know the trogons are roosting, and, turning down the last bend of the *arroyo*, come into full view of our tents, shining in the moonlight.

Stronger than ever there comes to us the love of all the wildness which receives and shelters us so kindly.

The tent in the little shelf of the cliff which we call home is open to receive us. We sleep, to dream of cool pines and the warble of bluebirds. We wake, to hear the scream of a macaw and the song of a hummingbird's wings.



WESTERN MOCKINGBIRD SINGING

CHAPTER XII

THE TROPICS

FINDING our semi-tropical camping-place so delightful, cool at night, and during the heat of the day tempered by refreshing breezes, we were encouraged to push on to the very heart of the tropical Pacific lowlands.

A day of packing; a week's return to Guadalajara for fresh provisions and more photographic plates; a return to Tuxpan; the right of way of a freight train contested by several misguided *burros;* a delay of five hours in an alkali desert, while the track and freight train are restored to their normal relative positions; a three o'clock breakfast by starlight in the *patio* of the Hotel Central — and we were off on our long ride.

At this early hour the air was vital with life-giving power. Our horses bucked from sheer exuberant energy and we gave them rein and galloped like the wind, through the long, narrow, earth-paven streets and out upon the plain: world-wide it seemed in the soft glow of the stars. Is there a more delightful sensation in the world than to feel a strong horse beneath you, moving with great four-footed leaps, while you, poised,

steady, guide him with a touch? A Centaur had indeed compensations for his grotesqueness!

As we reached the outskirts of the village, we glanced back, and there, balanced in the vista of the

TUXPAN IN EARLY MORNING

narrow street, was a burning, brilliant crescent moon, magnified in size by its low position. The old cathedral was warmed by its light and the tile-edges and adobe walls of each home were silvered.

When fairly on the trail we rode slowly, passing

our former camping-places and resting during the heat of the day. By twilight we made Tonila, the halfway village, nestling at the very foot of the mountain of fire. The usual *fiesta* was in full swing, for which we were glad, as it ensured an abundance of snow ice-cream. This we enjoyed all the more when we learned that the snow was brought by Mexicans in sacks from the lofty frozen summit of the fire mountain's dead sister peak.

The little *plaza* was a weird sight that night. The wide-open doors of the dim church revealed the figures of kneeling women and children. Outside, the flickering light of a multitude of bark-torches flared unsteadily, throwing lights and shadows among the crowd of Mexicans. Now and then an unearthly glow fell upon all and then died out — the eternal torch of the overhanging volcano. The Mexicans bought *pulque* and *dulces* and listened to the pitiful little band. Once, at a more flourishing period in the annals of Tonila, the natives had erected an elaborate and gaudy band-stand, which was now falling into ruin. Though their numbers had lessened and their *pesos* dwindled to an all-pervading poverty, yet their love of music was no whit less. In the centre of the dilapidated platform stood a lonesome little group of four. On the floor was a low box. On its centre a candle. On each side of the dim light was a piece of tattered music. With two worn-out violins, a guitar,

and a cornet, the performers were interpreting a bit of grand opera. They bent painfully over the low box, and when a gust of wind snuffed the candle, the music ceased for a moment, to be taken up at the same note when the taper was relighted. With miserable instruments and with no leader, they yet kept perfect time, and hardly a note was flatted. The rapt attention of the crowds of Mexicans and their enthusiastic applause were hearty incentives to the musicians to do their best.

Before daylight we were up and mounted again, feeling our way down steep *barrancas* and splashing through ice-cold streams. Suddenly a warm glow of light flooded us, and, glancing up, we saw that the sun had lighted up the gray-white, lava-covered slopes of Colima, which reflected the glory to us, deep in the twilight of a narrow gorge. At the magic touch of this light the spell of silence was broken, as sleep released a great host of living creatures. Macaws, heralded by their harsh cries, passed over from their roost in the piney depths of the mountain. The chorus of Canyon Wrens rang out, and an oriole stirred the echoes with a liquid *whew-whew-whew-o!* A certain species of wild fig, a very characteristic and noticeable tree in this portion of Mexico, grows upon the sheer, rocky walls of the *barrancas*. It has a hard, smooth bark, yellowish white in colour, and its roots, which are of necessity exposed to the air, are also cov-

ered with bark of similar colour and texture. Instead of the trunk ending suddenly at the base and ramifying into a mass of radiating roots, the main stem gradually divides into these structures, which wind and twist, like so many snakes, about the crevices of the cliff, often reaching downward in total length many times the height of the tree itself. At the bottom of the canyon they enter the ground and lose their yellow covering.

Whenever birds, insects, and flowers were absent from the trail and the volcanos were temporarily hidden from sight, we could always occupy ourselves with the study of pack-mule psychology. And there was never lack of interesting material. Verily some of these sure-footed, long-eared beasts of burden seemed to be endowed with human intelligence, and that too of an order highly developed through knowledge of much wickedness! One vicious beast had a trick of slyly rubbing up against our riding-animals, choosing a time when the trail narrowed and deepened, thus bruising our bodies most unmercifully. When urged on faster than they liked, they would carelessly and with sleepy eyes edge up to us and nip our ankles sharply. But the remarkable exhibition of intelligence, to which I have alluded, was shown in the ingenious ways in which they sought to ease or relieve themselves of their loads. One large black mule, aptly named Diablo, was a stubborn brute and would take any amount of punishment without

accelerating his pace in the smallest degree. Then, without warning, he would start out on a run which soon left the rest of the pack-train far behind. In fifteen or twenty minutes we would come in sight of him, comfortably resting on his back in the middle of the trail, his legs sprawling in mid-air while he took his brief *siesta* reposing on our clothing-bags. We soon learned that photographic plates and other breakables must not be intrusted to him. He well knew that his load must be taken off and readjusted before he could rise. This philosophic problem of gaining a momentary rest was solved by two other animals by *sitting down* with their loads! Whenever a low ledge of rock bounded the trail they would back up to it, crouch down upon their haunches like dogs and rest the edge of the packs on the ledge, looking most comical as they sat there, gazing about with their huge ears bobbing back and forth.

As a rule, these strong animals are good steady workers. When one stops and absolutely refuses to budge, the Mexicans immediately unload it, for this is a sure sign that something is wrong with the pack. Nothing will induce the animal to move until his load is made right.

The most wonderful characteristic of these mules is their ability to survive accidents and falls which would break every bone in the body of an ordinary horse. An animal is sometimes overbalanced by its pack, and

stumbling on the edge of a slope, it rolls many yards over and over or even head over tail down sheer slopes. After such an occurrence, when I would expect to gather up my belongings from a mass of mangled mule-flesh, I would instead find the creature perhaps astride of a tree which had broken its fall, or huddled, bruised, but otherwise uninjured, on the next turn of the trail below. When such an accident occurs, the animal seems to gather its head and legs close to its body and, hunching its back, rolls harmlessly on until something stops it.

More than once I have seen a mule, laden with cocoanuts or sugar, deliberately kneel and slide or roll swiftly down to the next bend in the trail. We should never have believed, if we had not seen it, that animals could survive some of the experiences which befell these mules. In fact they have a remarkable faculty for getting into scrapes which end in a short relief for them, and for getting out of others which do not terminate thus happily for them.

All day we rode on, always downward and curving gradually around the twin volcanos. They were lodestones which forever drew our eyes. The black pine forest on the shoulders of the fire mountain kept its denseness and its dark hue to the gray higher slopes of deadly heat. Here and there, wide paths were cut deep down among the pines, where the hot outpourings had seared and shrivelled everything before them.

The sister peak presented a very different appearance. Its pine forest was as black and dense as that of the other volcano, but at the higher elevations the black faded to dark gray, this to lighter, where the shrubs and dwarfed growths gave place to moss and barren rocks, and above all rested the gleaming cap of snow.

As we rode on, hour after hour, the aspect of the two peaks constantly changed, and as we looked up from time to time, it seemed as if we were encircling many mountains instead of one. That night found us at the city of Colima, with the volcano at our backs.

Next morning a little engine drew us along the narrow-gauge track toward Manzanillo and the Pacific. The mountains were left behind and we were in the lowlands bordering the coast. We passed plantations of coffee and rice and thick jungles of trees, unnameable to us. Our bags and tents were unloaded at a forlorn little station with the euphonious name of Coquimatlán.

In choosing our destination we had trusted to luck, and had selected the wildest country of which we could learn, taking a letter of introduction to the owner of a small isolated *hacienda*.

The train went on and left us. The natives drew near, and we mounted guard over our baggage and began to palaver for information and for mules. The latter would not be forthcoming until late afternoon, and information was extracted painfully and unsatis-

factorily. The average Mexican is willing to tell what he knows, but this is almost *nil* concerning the country, even about his own home, while five miles away is to him a *terra incognita*.

When we were almost in despair as to which direction to turn, Providence sent along a hand-car, which we flagged. After a little tactful display of red-sealed official papers, we obtained permission to take our guns and cameras and board the little platform. Our Mexican was to follow later with the baggage. All was down grade and we gradually attained a momentum which made us gasp for breath. On and on we went, whizzing around sharp curves and bumping over the uneven rails. The adobe huts soon disappeared and the wilderness crept up to the very edge of the track. Once we dashed straight through a covey of Scaled Quail which rose from the track, the birds not having time to fly to one side.

At last the brake was applied and we came to a stop near a narrow opening in the jungle. Leaving a signal guide for our Mexican, we set out on foot. For two miles we followed this trail which ended at an isolated *hacienda*.

A TROPICAL CAMP

The letters of introduction which we carried opened the heart of the overseer and his family, and his disappointment was sincere when he learned that we

OUR TROPICAL CAMP

did not desire to share his home and board during our stay.

These Mexicans of the middle class have some education and they are most kind and hospitable, but we could not enjoy life on a diet of *tortillas* and *frijoles*, nor could we become accustomed to that familiarity with domestic animals, which is their custom. Hens begging for crumbs leaped fearlessly upon one's lap or upon the dinner-table, little chickens swarmed over one's person, while pigs, dogs, puppies, and cats were omnipresent, — surrounded, fondled, and trod under

foot by innumerable very small and very dirty little Mexicans, almost as unhampered by clothes as their furred and feathered playfellows.

We were glad, however, to accept the shelter of the great bare guest-house, for the first night. Our Mexican cook rolled up in his blanket on the porch outside, but the hosts of fleas drove him to the dining-table, which was also on the porch. Here he alternately dozed and did battle with a rooster, which persisted in perching upon and crowing from the head of the unfortunate youth. Indoors our cots kept us out of trouble, but a vampire annoyed us for an hour or two, fluttering close to our heads and making sleep impossible. The horses next morning showed evidence of visits from these bloodthirsty bats — long streaks of blood on their necks and shoulders.

A thorough search of the neighbourhood, on horseback, revealed, about a mile away from the house, an open glade which was some twenty yards from a stream. Here we decided to make camp. We could not refuse our friend's offer of assistance, and, under the strong hands of a half-dozen sturdy Mexicans and Indians, our tents were unrolled and set up, the camp site cleared and a barrier of thorns erected, all as if by magic. Milk and *melon zapotes* — a delicious melon-like fruit which grew at the top of a tree — were promised, and our opinion of the middle-class Mexican character rose another notch.

One of the Mexicans said that he hoped we were good Catholics, because of *that* — pointing to the top of the cliff above our camp. I saw nothing but a huge projecting stone. He was astonished that my senses were so dull, and explained that the Virgin was there; and we found that this legend was implicitly believed. Some heretics, so the story goes, once passed through this country, and here the Virgin appeared, the vision instantly converting them. Her image remained in semblance of stone — to Mexican eyes. Our Mexican friend shook his head when he found that we were not Roman Catholics, and day after day we were urged to move, lest, because of our unbelief, a terrible fate overtake us; but we insisted on remaining and claiming the Virgin's protection, and she did not betray us.

Twilight seemed even shorter here than in the higher altitudes, and we slept too soundly to notice what hints of the tropical life reached our tent that first night.

Our walk to the stream in the early morning led through a little green vale, arched over with dense foliage. The great wide-stretching limbs of trees were all corded together and draped with thick, knotty lianas, which stretched to the ground, or swung clear in great loops — trapezes, swings, and slack-ropes ready for parrot or monkey. Feathery-headed palms reached high above all, their long, straight columns, clean and smooth, piercing the roof of vegetation high overhead.

At the end of the glade a cold spring trickled from an orchid-padded wall, and not thirty feet away, a flow of tepid water, rich in minerals, had worn a little clear path for itself, some property of its composition being inimical to vegetable growth. Just beyond the two springs, a deep pool of the crystal water nestled at the foot of a gigantic wild fig, whose branches reached out a hundred feet in all directions.

The stream flowed on in a most erratic course, twisting and winding until, in following it, one lost all idea of the points of the compass. Its banks occasionally widened out into lawn-like stretches, or dense ferns and reeds restricted its course to a deep narrow channel. A short distance away from the stream, the effects of the long rainless season were very evident in the lack of green verdure and the intrusion of thorny acacias and pulpy cacti.

We were about twenty miles from the Pacific Ocean, over four degrees south of the Tropic of Cancer, and but a few hundred feet above sea-level. Our camp was at the very base of a steep cliff, while to the west the jungle thinned out to low, open bush. To the south and southwest wound the stream, while the north framed the ever more wonderful volcano. Amid such surroundings we began our camp-life in the tropics.

NOCTURNAL VISITORS

The nights were full of interest and almost every

time we rolled up in our blankets for the night, some new creature came to investigate the strange white things which were so tantalizing to the curiosity of the

THE GIANT FIG-TREE

wild kindred. The sound of even the lightest breath of wind, sifting through the finely divided leaves of the mimosas and palm fronds, was as different as possible from the sighing of pines or the rustle of ordinary foliage. It was a soothing, softly sighing sound, which will ever be the background in our memory of tropical voices. The foxes of this region were no ghosts, but given to frequent sharp barking and silent, nervous scurrying up and down our little glade.

Hardly were we settled for the night, when a low, distant moaning drew us outdoors, just in time to hear the full chorus of a band of coyotes, the lonesomest sound — save the cry of a loon — in the world. The coyote is a cowardly, sneaking wild dog, afraid to face any creature of size, but nevertheless the coyote has a voice which sends the shivers up and down one's spine. Out at the end of the open glade we spied several dusky forms against the sky-line, and from one of these arose a long-drawn, hopeless howl. Then the others joined in and the sounds quickened and shortened and rose in chorus, until the air was rent with a frantic climax of *yaps*, each animal striving to outdo the others. The result was demoniacal, and yet in perfect keeping with the wild surroundings.

Every evening about six o'clock (never varying more than five minutes either way) a horde of tiny bats rained down upon our camp, but whence they came we could never discover. Six or seven hundred, as if at a given signal, poured out of the dusk and dashed low through the tangle of vines past the tents. Our faces were fanned continuously by their wings, yet never did they strike, or even graze, any object. So thick were they that every sweep of the butterfly-net enclosed one or more. Is there any living creature with a more grotesque and fiendish expression than a bat! Their immense, many-lobed ears, the curious leaves of skin on the nose and cheeks, the tiny, evil

eyes, and the cruel, grinning mouth, with its many sharp-pointed teeth, which gnash in impotent rage, as one holds captive the diminutive imp! After all the bats had passed and vanished, they would sweep back again, finding our little glade a profitable hunting-ground. A stone thrown up drew a score of the little creatures in its wake, as they mistook it for some large flying insect. After lingering with us for a short time, the bats dispersed, flying, who knows where, into the dark night.

Not far from the camp, well up on the hillside, was a small-mouthed crevice which opened into a large dark cavern. This might have been the home of these bats, but the air within was so foul that exploration was impossible.

In the dim, flickering light, where the flare of our cooking-fire melted into the all-surrounding darkness, we sometimes saw strange dark creatures leaping and running. Noiselessly they sped here and there, like wandering shadows. When we finally caught one, we found them to be great hairy-legged spiders, forbidding-looking and with jaws suggestive of the tarantula. We heeded them not and they never troubled us, nor did the scorpions which we unearthed now and then in the folds of our tent, both the common kind and a small species of Whip Scorpion.

After the passing of the bats came an owl concert, several gruff voices calling to each other from tree to

tree, though never a feather did they show to us. Soon after dark the wild kindred of these tropical jungles awakened and came forth from all the nests and holes and crevices and hollows in which they had slept out the day. Snug in our tents we listened to the sharp squeaks of the vampires, following their lesser brethren, but on more sanguinary quests. The coyotes' chorus rose and died away; the thin barking of the Gray Foxes followed, like an echo of the coarser sound. Then the cordon of creatures drew closer and closer around our camp. There were always many stray bones and scraps which we left scattered about on purpose, and the scent of these reached, and unerringly directed, scores of keen little moist muzzles.

How exciting it was to lie and listen quietly to the soft *pat! pat!* of scurrying feet! We occasionally crept to the tent-flap, or to some one of our little observation holes, to see how correctly our imagination had interpreted the sounds. The quick crunching trot of an armadillo was always easy to distinguish, but that scuffling and scraping must surely be a fox or a very large raccoon or perhaps even some larger, fiercer creature! A glance outside showed the originator of all this commotion to be the tiniest of white-breasted Wood Mice! Again, when no sound was audible, a stealthy look revealed a pair of exceedingly long-tailed Mexican Opossums, ambling silently about near by.

What cowards they are! Once we caught a greedy one in broad daylight, dragging away a heavy piece of meat. As he caught sight of us, the meat dropped from his jaws and he fell over in a dead faint, simulat-

MEXICAN OPOSSUM "PLAYING 'POSSUM"

ing a death spasm. I hastened to photograph him, knowing the ways of an opossum too well to feel any sympathy with his apparent agony. Then we hid and watched. Gradually the glaze passed from his half-closed eyes, he raised his head and cautiously stood upright. Again and again he hungrily eyed the meat, but at last some terror seized him, and he scampered away to the jungle as fast as his flat-soled feet could carry him.

Not only were we made aware of the presence of many creatures about our camp at night by their shadows, the sounds of their footsteps, and their voices, but musky scents were wafted abroad, pungent and penetrating, or delicate and barely perceptible. Twice when a musky odour filled the air, I caught a glimpse of a long, undulating, weasel-like creature.

One night a band of little carnivores were making merry over the remains of some squirrels and doves which had furnished our supper. Suddenly there was an utter cessation of all sounds, and for a full minute all was strangely quiet. Then a new sound came to our ears. We had never heard anything like it, and yet we shuddered. Why, we did not know, unless at its mystery.

A soft slithering, as if something were scraping over the coarse sand and pebbles past our tent. The moon was bright, and I opened the tent-flap and looked out. Not a living thing was in sight, not a sound save an occasional click from a Barn Owl flying above on silent wings. The strange noise grew louder, and soon from the darkness a long, undulating form appeared. A great Boa was making its way to the water. The great creature was harmless, this we well knew, although measuring fully ten feet in length; but the sight of this huge serpent, unconscious of being watched, passing slowly on some errand of its wild life, through its native jungle, was thrilling. How

keen must be the senses of the smaller creatures to take alarm, so long before our dull hearing told of the Boa's approach! It passed, and, flowing smoothly as a current of water, vanished in the pale moonlight. How lithe and full of subtle, irresistible power it seemed; one of the masters of the jungle, confident and unafraid! The Mexicans have an unreasoning terror of these *culabras*, as they call them, attributing to them all manner of terrible characteristics. With the exception of some rattlers which we saw near the Chapala marshes, and those which we heard while riding over the trail, this was the only snake we encountered in Mexico. No, there was one other, a tiny, slender, tree-snake (*Oxybelis acuminatus*), harmless, and of a most delicate tint of green. When he was discovered he was wrapped in deep slumber, the cause of which, as I later found, was his recent dinner, consisting of a good-sized lizard (*Cnemidophorus*).

The terrors of serpents, tropical insect scourges, and other dangers of which we had been forewarned, existed, so far as our experience went, entirely in the minds of our friends in the North.

The night following the vision of the Boa, we were surprised to hear some creature trot up to the very tent, sniff audibly, and scratch impatiently at the canvas. It then proceeded to the other tent, some twenty feet away, wherein were our provisions and our young Mexican cook. One glance was enough to know why

this creature exceeded his fellows in boldness and reckless audacity. There, endeavouring to find an opening in the tent, was the largest skunk I had ever seen. There was little time to consider what was the best thing to do. The head of the animal was already under the tightly pegged canvas. Calling to Ricardo to retreat to the front end of the tent, I emptied both barrels of the shotgun at the bundle of black and white fur, which the moonlight revealed. Good fortune was with us, and the force of the discharge hurled the dreaded creature down a declivity, and our provision tent and cook were safe.

We later found that skunks were quite abundant, but none so hungry, or so foolhardy, as this grandsire of the *Mephitis*. Among its fellow animals the skunk reigns supreme, all giving way before its flaunting, conspicuous tail. As they trot about among the dark fronds and vines, they are exquisite little creatures in colour and in actions, but this is truly a case where "distance lends enchantment."

Several times we heard in the distance the screams of some one of the cat tribe. Just about dark, a few days after making camp, as I was bringing an *olla* of water from the spring, a large animal half scrambled, half fell from the top of a sapling and scampered away through the underbrush. The thought, "cat!" was dismissed, when the clumsiness of the creature was apparent, but it was not long before we became better

acquainted with a Coati Mondi, for such it proved to be. It is a dark brown animal, some three feet in length and coon-like in build, except for a remarkably long snout and tail.

A colony of these Coatis lived among the rocks not far from our camp, and every evening they started out on their foraging expeditions. They did not join their cousins the Raccoons and Ring-tailed Cats about our tents. When they came out about dusk, they all trooped down to the water's edge and drank thirstily, then washed their faces, coon-fashion, and combed their handsome fur with their long claws. They appeared to feed upon lizards and berries and they were also very fond of a certain kind of hard, round fruit. When four or five of them were among the branches of a small sapling, the young tree suffered severely. They hunted mice in the open spaces of the woods, and I sometimes saw several crouched here and there, ready for the first signs of life among the leaves. With a dog they were easily treed, and they fought fiercely when cornered. When playing and leaping about each other, they uttered low harsh grunts, and we never heard any other utterance. The Mexicans delight to hunt these Coati Mondis, treeing them with dogs, and killing them with revolvers. They work themselves up to a high pitch of excitement, shouting, as a kind of hunting-cry, "*Adios Tejon!*" — the latter word being the Mexican name of the animal.

The Raccoons, the Ring-tailed Cats and the Coati Mondis are all expert climbers, and the birds must indeed be careful in selecting their nightly roosts. I noticed that instead of choosing perches near the main branches or trunks of the trees as is usual in the North, they preferred the more slender twigs toward the top, showing less fear of owls than of terrestrial enemies. If near the ground, they chose some dense, thorny tangle, impenetrable to even a hungry coon.

How perfectly the actions and the general *mien* of these nocturnal creatures reflect the efficiency of their means of defence! The life of the little mice, the prey of all, is one great fear; they nibble, wash their fur, scamper about, but ever with large, fearful eyes, ever with feet braced to spring to the protection of their holes. The opossums start at every sound and slink tremblingly away. The Coatis make little show of defence, but, when there is any avenue of escape, flee quickly. The Ring-tailed Cats turn a moment and bare their teeth in a defiant snarl, before taking to flight. The armadillos potter serenely on their way, heeding little to right or left, respectful of others' rights, but calmly confident in their tooth-and-claw-proof armour of scales. The skunk alone dares to herald his presence with flourishing tail. No haste, no terror marks his gait. He rolls along with an impudently nonchalant air, daring any to oppose his path. "I am Skunk!" reads his demeanour; "I am small, slow of foot, and

of little strength. I have no armour, and my teeth and claws are too weak to be feared, *but* — do not anger me!" And all the creatures withdraw from his path. If one be so bold as snarlingly to hold his ground, an impatient stamp of the foot shows the rising wrath of the black and white one, and, unopposed, he goes on his way.

The hoarse cries of the omnipresent macaws awakened us in the morning and flocks of the beautiful lavender-feathered Amazon Parrots assembled at the water to quench their thirst. They then returned to chatter and clamber about the trees near by and to crane their necks from side to side, utterly unable to satisfy their curiosity concerning us.

The macaws were remarkably regular in their movements. Early each morning a half-dozen passed overhead to the westward and each evening the great birds returned in pairs by the same route, and perched for several minutes on a particular dead limb, some distance up the cliff. There they conversed in low gutturals and preened each other's plumage, before passing on to their nightly roost. Half-past five o'clock, almost to the minute, saw them on this perch. We could predict to within a few minutes their appearance around the farthest turn of the cliff. These great birds are called *guacamayo* by the Mexicans, who believe that they never descend to the ground, except in the month of May, and then only to feed on a certain kind of hard

nut. Certain it was that much of their food consisted of nuts which had a rind like stone itself, but which their powerful mandibles crushed with ease.

The most abundant birds in this locality were the beautiful yellow and black Mexican Caciques, great tropical orioles, which are so characteristic a feature of equatorial countries. As in the virile warmth of Mexico many things are carried to an extreme, which, in the North, are developed but moderately, so with the nest of the orioles. Our Baltimore Oriole builds a long, shapely purse, deep-cradled and elm-swung, where its eggs and young are exposed to but few dangers. It is said that in the south of the United States, owing to the increase of heat, the nests are shallower, more vireo-like. Yet in the tropical heat of Mexico, the nests of the orioles are three and four feet in depth, hung from the tips of branches and waving in every breath of air. They are finely woven of reeds, open-meshed, but tough and difficult to tear. A small entrance at the top leads down through the long, narrow neck to the globular nest-chamber at the bottom.

The morning flight of these *calandrias*, as the Mexicans call them, was one of the delights of our camp-life. Jet-black birds they were, long crested, with brilliant yellow shoulders, lower back, and tail, save the two inner feathers. The ivory-like beaks were long and needle-like, as such a master weaver's should be. They came from the northward, as if the bats of the

night before had been transformed by some witchery of the morning sun, and were returning in this guise. Hundreds of the yellow and black forms flashed through the trees, flock after flock of fifty or more,

MEXICAN CACIQUE

spreading through all the woods in smaller companies to feed. As they passed, their wings made a strange,

whip-like, humming sound, which rose to a continuous murmur when a large number flew past at once.

As the days passed and we still camped, unharmed, in the presence of the Virgin's image on the cliff, the poor Mexicans, who came with eggs or vegetables for sale, began to hold us in high esteem. My small medicine-chest and bottles of formaline aroused still greater respect and I found, to my surprise, that I had gained the reputation of being an infallible physician. It was pitiful to see the faith with which the poor Mexicans and Indians brought their sick children, or told me of their own troubles. I vowed that I knew little or nothing of therapeutics, and that I had only the simplest of remedies with me. But they shook their heads sadly and added a few *centavos* to the pittance which they had offered me, not believing my assertion that I did not want pay. These poor people had no idea of hygiene or of the curative properties of pure water. I did what I could with listerine and dioxide of hydrogen.

There is a wide field for missionary work in this country, but a car-load of antiseptics and the doctrine of cleanliness should precede it. We, of the North, have not the slightest idea of the misery resulting from the ignorance of these people. One bright young fellow whom I tried to cure was literally dying of dirt. When taken sick the only treatment which his family advised was complete abstinence from the use of water! His food, in the hottest of weather, was fried beans, pork,

and *tortillas*. Indeed, the staple food of the people the whole year round is *frijoles* (fried beans), and *tortillas* — hard, flat, leathery cakes made of ground corn and water.

POD OF MILK-WEED TREE

The nights in this tropical country were cool and refreshing. For an hour in the early morning there was no wind and the black flies drove us into our head-screens. With the sun came a breeze and the flies vanished as if by magic. The heat increased until midday, although even then one could walk slowly about

in the sun without feeling oppressed. But the birds and beasts set us a good example and we found it a good plan to sit quietly in the shade, writing or examining our specimens until about two o'clock. At five in the afternoon the black flies again appeared and held high revel for one hour, when the coming of the bats dispelled them.

Six times we had excellent opportunities of observing the great Guatemalan Woodpecker, with the beautiful scarlet head and crest flashing through the trees. No matter how much is given to a naturalist to enjoy, there is always something else for which he yearns. There were three things — all possible but improbable in this portion of Mexico — for which we were ever on the lookout — the grandest of all birds, the Harpy Eagle; the most magnificent of woodpeckers, the Imperial; and some stray monkeys which might have wandered so far north (they range still farther up on the eastern side of the country). But these things were withheld from us until another time.

Everywhere through the underbrush scampered large squirrels with thick coats of grizzled fur (*Sciurus poliopus cervicalis*), while with them was a lesser number of squirrel-like Spermophiles (*Citellus annulatus*), handsomely marked with gray above and bright rufous below. Both species live in burrows in the ground or in crevices of the cliff, near which our camp was pitched. There were literally hundreds of these frisky

little rodents within a few hundred yards of our camp, and they were so tame that they would not move more than a few feet out of our way.

They kept mostly on the ground, but occasionally a dozen would rush up a tree near camp and show that they had lost little acrobatic skill for all their usual terrestrial life. This particular tree was bare of leaves and fruit, save for one large oval pod. I climbed up one day and cut this off. It split open in my hand — a wooden pod or box filled with great, delicately tufted seeds, much larger, and with even more filmy plumes than our common milk-weed. Indeed I found that it was really a form of arboreal milk-weed (*Calotropis procera*), not a native of Mexico, although growing here in some abundance, but imported by some accident from Asia.

THE COTTON GALL

We often saw what we thought was a species of wild cotton, with good-sized bolls; but a closer investigation revealed the fact that the cotton was really a parasitic outgrowth from the under side

of the leaves — a curious kind of gall caused by the ovipositor of some insect.

Certain charming little birds occasionally flitted close to the camp, never leaving the underbrush. They were active, insect-hunting warblers — grayish above and scarlet below, the bright hue bordered in front by a collar of black across the breast. Sometimes they mounted a twig and sang a brief, silvery song, but a sharp call-note marked their presence, when busy in quest of food. Only when the song was heard might we hope for a good look at their rosy feathers, as at other times they persisted in presenting their dull upper plumage.

We called them Scarlet Ground Warblers, but Science demands *Granatellus venustus*, or at most only unbends enough to permit us to speak of them as the Du Bus Red-breasted Chat! Fie on human names! What poetry or significance does the appellation convey? What iota of the bird's habits or hint of the dainty song or form or colours is conveyed in those first syllables?

One very remarkable fruit attracted our attention. Scattered over the tree were many round, green seed-pods. These, when ripe, split open on one side and the slit gradually widened. The seeds within now protruded in two rows, bright scarlet at the base with black and white tips. The effect was most startling, for, as we stood below and looked upward, a thousand

THE GROTESQUE FRUIT

mouths seemed to be grinning down at us. When overripe the tooth-like seeds projected still farther from the fruit-lips, and the dripping sap added a new element of grotesqueness. Absurd as it may seem, the facial expression of the seed-pods changed from day to day! When first beginning to open, a gentle smile characterized the fruit, and, as the gap widened and the seeds appeared, the semblance to a smile became a grin,

and at last a ferocious snarl! Its botanical name is *Tabernæmontana palmeri*.

Band-tailed Pigeons and Red-bellied Ground Squirrels were very abundant, and our larder never ran low. The White-winged Doves were building their rough platforms of sticks high up in the Mimosa trees, but none were quite finished before we broke camp.

Ever since we began to observe Mexican Nature, the Caracara Hawks had attracted our attention, but not until now had we seen them so numerous or so tame. They fairly equalled the vultures in numbers and excelled them in audacity. In habits they were vulturine, joining these birds in their feasts of carrion and refuse. Indeed their almost bare face hints of such habits. They are interesting birds, and odd to very grotesqueness. Psychologically speaking, there is a very distinct line between the vultures and hawks. The latter are usually stolid and severe in their demeanour, while vultures are endowed with a spirit of rollicking fun and humour which is remarkable. Caracaras share this characteristic, and are the most playful of all birds in captivity. I have seen them frolic with each other in a most unbird-like manner, rolling over and over upon the ground, turning somersaults until every feather seemed to be on end.

We found them no less amusing in their wild state, and their antics over the bones which we strewed

about for their delectation were very amusing. Many of the positions which they assumed would disgrace a taxidermist should he attempt to copy them. A favour-

THE WOODEN CARACARA

ite pose which I managed to catch with the camera was a stiff, wooden bracing of the feet, the bird resting partly on the tip of the tail. When very hungry, and in view of a prospective banquet, the Caracara had a fine, almost noble bearing. The body was held

in a low, hawk-like attitude, the crest rose and fell nervously, and the eyes were bright and piercing; but when sated with food and resting, it seemed wholly another bird. The position was then very upright, the head drawn down, the eyes half closed, and when all the cactus tops in sight were thus surmounted, the effect was most singular. The senses of the Caracaras seemed not so keen as those of the vultures, and the former birds were, in a sense, partly parasitic on their ignoble associates, — the vultures, — following and watching them closely. When some prey was spied, the Caracaras forcibly took the first and best share.

There was great excitement among the vultures and Caracaras when the dead skunk was discovered, some distance from our camp. A great number collected at once, but were rather shy about approaching the dreaded animal. The Caracaras led the way and walked slowly toward the skunk, when, suddenly seized with terror, they turned and ran off at full gallop, spreading the alarm and scattering the whole mob of vultures. At last hunger overcame all prejudice and they attacked the carcass. To my surprise a pair of skunks unexpectedly appeared at this moment, and trotted quickly out from the underbrush. They rushed at the feathered scavengers, who fled in wild dismay, this time taking to the tree-tops. The skunks stamped angrily and sniffed at their dead companion, and then

disappeared as suddenly as they had come. In a day or two the bones of the skunk were picked clean. It was interesting to see what creatures were attracted by carrion. I was surprised to see opossums come frequently to the scattered remains and roll upon them. Beautiful butterflies, with wings shot with lines of purple, hovered and alighted upon the ill-smelling bones, and lingered in the vicinity all day, as if the odour were that of some exquisite flower. In fact, certain flowers, much frequented by some insects, are known to exhale most unpleasant perfumes, and probably these insects were examples of that group.

The butterflies at this season of the year were very interesting, — not from an entomological collector's standpoint, however, since all were bedraggled and torn. They were the survivors of the past season, barely holding their own, and their wings testified to many narrow escapes from birds. Out of fifteen butterflies, which I captured one morning, all but two showed evidences of attacks by birds. In no less than twelve instances the tear was in some marginal spot of brilliant colour, showing the value of these markings on the extreme edges of the wings, in attracting the attention of the assailant from the more vital parts of the insect.

Every walk about our camp revealed new flowers or seed-pods of beautiful colours and strange shapes. We longed for the key to the inter-relations of plants and

insects, for hints concerning the complicated dependence of all the life about us, — bird on insect, insect on plant, plant on both, which ever links even the extremes of Nature.

Sitting in the shade of our tents during the heat of midday, we became interested in a flowering vine which twined up the young trees to which our tent-ropes were fastened. We found that it was a species of Birthwort (*Aristolochia*), related to the Dutchman's-Pipe of the United States.

Until we learned its affinities, we called it the Trumpet-Trap Vine. It was an interesting illustration of the carrion blossoms which I mentioned a few paragraphs back. The odour was not strong, and though there were hundreds of flowers on the vine, we could not detect the unpleasant scent unless we carefully smelled a number of blossoms at once. They gave forth a faint odour of musk, very different from the odours of other species of this family, which are tainted with the scent of carrion, or rotten fish, while a West Indian variety has an odour exactly like decayed tobacco. Slight as was the scent, it seemed more than once to attract burying beetles, which we noticed bumping clumsily against the flowers, misled in their search for a suitable place to deposit their eggs. These were uninvited interlopers, which could benefit neither the blossoms nor themselves, and which soon went humming off into the woods.

The delicate-stemmed Trumpet-Traps twined and twisted their way high overhead and hung in festoons about us. The vine had rounded, heart-shaped leaves, and the long tubular flowers were of a dull yellowish hue, reminding one in their shape somewhat of miniature Jack-in-the-Pulpit spathes. These flowers were indeed tiny, compared to the blossoms of certain South American species of this group, which are so large that native children slip them over their heads, like caps with tall, pointed crowns.

After a little patient watching and a little dissection of blossoms, we learned much of the interesting life history of this vine, and we later verified the significance of the details in Kerner's "Natural History of Plants." One thing became apparent at the outset; namely, that the black flies had at least one other mission in life besides that of trying, for a short time morning and evening, to penetrate our head-nets. The little rounded lobe at the entrance of the Trumpet-Trap flower is like a doorstep, forming a convenient and safe alighting-place for any small fly or insect which may be attracted by the odour from within.

Let us follow the adventures of one of these troublesome black midges, which, for all we could see, were blood brothers to those of the Canadian backwoods. Our midge alights on the lobe of the Trumpet-Trap flower, which is just opened and as yet unfertilized. The little fellow twiddles his antennæ ecstatically, as

the (to him) delicious musky scent is wafted out. He makes his way upward and at once finds himself at the entrance of a long narrow tube, thickly beset with small hairs, whose tips, all pointing inward, meet at the centre. Before he enters he may, if he chooses, turn about and fly away, but once within he is doomed. "*Lasciate ogni speranza, voi ch' entrate,*" — All hope abandon, ye who enter in, — might have been fitly inscribed upon the flower's portal. Strive and struggle as he may, the sharp-pointed hairs only force him onward the faster, until the tunnel widens out into a circular chamber. This is free from the sharp recurved hairs and it is comfortably warm, in addition to which the soft-walled cells lining the little prison-chamber are, in midge estimation, good eating. For perhaps two days the little fellow is thus confined: then the anthers of the flower burst open and liberate a quantity of meal-like pollen. This is indeed a feast, and the black midge falls to and gorges himself, at the same time getting his body thickly covered with the powdery substance.

But even the most delectable dainties cloy at last, and, though the prison-cell has provided him with warmth, shelter, and food, yet the little midge becomes restless and seeks to escape. Sooner or later he finds the tunnel opening, through which he found his way into the blossom, and here a strange thing happens. The stockade of hairs no longer bars the way. The

inscription would have been false after all; all hope need not have been left behind. A few steps take him to the portal in the outer air, and his tiny wings bear him away into the sunlight.

But the memories of the feast in the magic chamber overcome all remembrance of the forced confinement; and our midge soon seeks another newly opened blossom with its inviting doorstep. As in the case of the first flower, the anthers are closed as yet, but the stigma is waiting for the fertilizing pollen from another blossom. In comes the black midge, urged on by a similar circle of recurved hairs. As he enters the chamber, the pollen on his body brushes against the stigma and the mission and real meaning of all this elaborate entertainment for the midge is perfectly accomplished. The desires of the midge were all selfish; and even the apparently gratuitous luncheon provided by the blossom was only a means to the all-important end of providing for the seeds of the next season.

But the magic goes a step farther. When the midge emerges from this blossom, if some pleasant memory should attract him back to the first flower, he would find himself rebuffed — the door locked in his face as it were. No sweet musky odour comes from the cells, now shrivelled and dried, and the stepping-stone lobe of the spathe, instead of being spread out, is withered and bent down across the opening, shut-

ting out any would-be intruder. Thus the seeds are allowed to ripen in safety; and a useless, and indeed harmful, competition with unfertilized blossoms is avoided.

Harmful self-fertilization within one flower is avoided by the delay of a day or two in the opening of the anthers, the stigma meanwhile having abundant opportunity to be fertilized by the incoming insects, for two or three midges are sometimes prisoners in the same cell.

But the flowers were not entirely free from molestation, and occasionally a small troop of birds would spend some time about, or even on, our tents, tearing the blossoms apart and devouring the unfortunate midges, sometimes even swallowing the whole blossom. Black-capped Vireos occasionally swarmed through the underbrush about us, and I once counted as many as thirty Nashville Warblers in sight at one time. On this vine we saw our tamest Townsend Warblers. They had long puzzled us by keeping to the tops of the highest trees, but here they came to our very tent-doors, and joined the Nashvilles in their hunt for midges. It was the frequent visits of these birds which first drew our attention to the curiously constructed blossoms, and the first thought was that these were like Pitcher Plants, carnivorous, entrapping the midges in order to extract nutriment from their dead bodies.

The study which we gave to these flowers of the

Trumpet-Trap Vine, growing so close to our tent, only showed what marvels were awaiting investigation on every hand in this strange wonderland.

HEAD OF CARACARA

CHAPTER XIII

THE HOT LANDS OF THE PACIFIC

NOT far from our camp was a tangle and maze of vines and fig-trees, through which the brook flowed softly, and here we spent whole days, quietly watching the tropical life going on about us.

As we parted the thick screen of leaves one day, a glance into the dim vista ahead showed a spot of immaculate white — a Little Blue Heron in its snowy juvenile plumage, standing motionless in the shallow water. The bird's quick ear caught a swish of the twigs and it glanced suspiciously in our direction. For a minute it stood straight and slim, then spread its wings and lightly and gracefully drifted away over the water, its blurred reflection doubling its beauty, until a low-branching cottonwood intervened.

At the first step forward, three White-winged Doves burst from the underbrush ahead, and with a clatter and rush of wings left the woods, much to our relief, for these stupid creatures never take to flight until one is almost upon them, and then tear off with such an uproar that the birds, for many yards around, are made suspicious and uneasy. But withal these doves were

beautiful birds, and when their plump, fawn-coloured forms would go humming away, brightened with three (almost) semicircles of white on wings and tail, the eye was delighted.

A sharp *chut!* came from my very feet and up sprang a bird, also with three flashes of white, but on noiseless pinions. It sailed about in a low, narrow circle and plumped suddenly down among the dead leaves, fifteen feet away. It was a Parauque, a strange name for a strange bird! It has the white wing-bars of a night-hawk, but its general colouration and actions are more those of a whip-poor-will. The marbled and mottled plumage of these ground birds is as beautiful as it is indescribable. A woodcock has similar patterns. It is the feathered essence of dead leaves, moss, bits of fungi, broken twigs, decayed wood and lichens. Parauques were very abundant in this locality, and we seldom took a walk without flushing a dozen or more. The actions of the one which I aroused in the tangle were typical of all. It almost invariably faced me each time it alighted, holding its head low, and thus hiding the white throat. The dark, lustrous eyes closed until they became two narrow slits. As I flushed it again and again, it once or twice alighted broadside toward me, but at my next movement toward the bird, it bounced up like a ball and oriented itself. The bird refused to leave the tangle, preferring to rise and settle a score of times, as I crossed and recrossed the

limited area in pursuit of other birds. Numerous as these birds were, all about our camp, we never once heard the nocturnal cry, which has given them their odd name of Parauque.

Our favourite tangle was seldom without its complement of Yellow-bellied Trogons — generally a closely associated flock of three or four individuals, betraying their presence by an occasional soft *cluck!* They are very similar to the rose-coloured trogons of our former, more elevated camp, but the rose is replaced with a delicate lemon yellow. These birds fed upon small berries which grew on slender twigs, too slight to support the weight of the birds. Their custom was to dart to the panicle of fruit, hover in front of it for a moment, snatch a berry, and return to their perch to eat it. When several of the trogons were feeding upon one small tree, it was a beautiful — a brilliant sight. From the weakness and small size of their feet and legs, this habit of feeding upon the wing would seem an inevitable one — as in the case of kingfishers and whip-poor-wills.

When at rest, their backs were always turned toward us, iridescent green in the male bird and uniform gray in its mate. When they left their perch, they fell forward, making a short drop straight downward, showing all the beauty of yellow and white and green. As suddenly, they then flashed upward, and none but dull hues were visible.

These are birds of the true tropics, comparable with no Northern family. Classed between the cuckoos and kingfishers, they resemble neither in appearance. The hollow curvature of the wing-feathers of a Bob-White is a characteristic so exaggerated in a trogon that the primaries wrap close about the body, rather like the skinny, clutching fingers of a bat than like the feathers of a bird's wing. Its feet and legs, feathered down to the very toes, are so tiny, that when the bird is perching, they are never visible. The Yellow-bellied Trogon is more silent than its congener, the Coppery-tailed, which we saw higher up in the mountains. Its common utterance is a soft *cluck!* When suddenly alarmed, it utters a sharp, rolling *cr-cr-cr-cr-ck!* which, softened and mellowed, is the ordinary call-note of the Coppery-tailed species.

Trogons always sit very upright on the branch, their tails hanging straight downward, but jerked violently forward at every *cluck!* The tail-feathers are so abruptly truncated that one almost wonders if these birds have not learned something of the Motmot's habits!

As I was watching a trogon one day, something drew my eyes aside to a small vista among the leaves, hardly four feet from my face, and there, framed in the clear opening, almost within reach of my hand, sat an exquisite Motmot, his pendulum rackets swinging from side to side — beating time to his mood. His soft red eyes, glowing from the centre of his great head, lent

a strange, unreal air to his whole appearance. Calmly he eyed me, never moving until I reached out my hand toward him.

A certain wide-branching tree, covered with berries, was never wholly deserted by birds, and generally its foliage was in constant motion, as its feathered visitors climbed among the leaves and fruit. Our hearts were gladdened by the sight of a flock of robins, but a second glance showed them to be strange birds, garbed in familiar dress and with the blood-mark of our robin in every action. But the hue of the breast of our robin covered the back as well, in these birds, giving us a Red-backed Robin, a very distinct species. From its scientific name we should call it the Yellow-billed. In every flock of twenty or more, there were several large, sombre-hued individuals, of varying shades from head to tail — veritable ghosts of giant robins. But whether a robin's plumage be faded to very ashes, or dyed a flaming scarlet, the sidewise cock of the head, the upright carriage, the well-known chirp penetrate all disguises. In a British volume this sombre bird is catalogued as the "Sorry Thrush," — truly a literal translation of *Merula tristis*, but surely Gray-breasted Robin is preferable!

These races of Gray-breasts and Red-backs may be, speaking from an evolutionary point of view, forefathers, cousins, or descendants of our Red-breasts. To us, they seemed unreal copies, mingling the familiar with

the strange in a way which was most fascinating to us, knowing, as we had heretofore, only our American Robin. I had never imagined that our beloved bird could have any imitators, he always seems so distinctly individual; there exists such a gulf between him and even his near relative the Wood Thrush.

Another familiar form slipped around the dead bark of a broken limb and with a penetrating chirp greeted me as a friend — a Black and White Creeper in full plumage. There was no mistake this time. Our little feathered countryman was on his way northward, perhaps the first of his kind to feel the thrilling impulse tugging him along, although the same instinct would as surely restrain him until the deep snows, which then covered his summer home, were melted and the cocoons and hibernating insects were bare and beginning to quicken in the sunshine of the coming month.

On the side of the tangle farthest from the brook was an impenetrable natural barrier of thorny bushes, the favourite haunt of a half-dozen wrens. They were Oak Forest Wrens, although they certainly did not deserve their name in this low country. Perhaps they had a nest in preparation, for they were very fearless and scolded me roundly, uttering a harsh wren-like chatter, whenever I approached. Now and then their clear liquid song was heard, a ringing *Chut'-e-ty! Chut'-e-ty! Chut'-e-ty!* bringing to mind the strain of our Carolina Wren.

Finches of various kinds flitted among the underbrush, clinging to the seed panicles or scratching among the dead leaves. The most abundant were the soft-chirping Black-headed Grosbeaks, looking in their winter garb like giant sparrows. With these were many gray and brown-headed Sinaloa Sparrows of the southern species—closely related to the Texas Sparrow. Hepatic Tanagers and Turquoise-fronted Buntings mingled with the others in the bushes or among the hanging vines. When a female of the latter species hopped into view, the thought at once came — is it possible that a female English Sparrow has penetrated even to this wild region! But the mate of the little brown bird soon followed, resplendent in blues of every hue — marine, cobalt, azure, turquoise! And our fears were laid to rest.

Birds have a wonderful faculty of dodging, when in full flight, through thick underbrush and vines without ruffling so much as a feather's tip; but in this land of spines and thorns they sometimes come to grief. Occasionally a tiny half-dried skeleton clattered its little bleached bones in the wind, or again we would come across a bird which had recently been entangled and thus met its death, perhaps a beautiful Painted Redstart.

One tragedy of this kind will long remain in our memories. Of all birds hummingbirds would seem most exempt from the myriad dangers which threaten the race of feathered beings — the dangers from

PAINTED REDSTART CAUGHT ON THORN

owls, snakes, the elements, and a hundred others. The tiny bright eyes of the hummingbirds, their marvellous vibrating wings, and their small size protect them from hawks and all such birds of prey. They fight fiercely among themselves, sometimes to the death, but it is very strange that these mites of the air are not more numerous — their food, the tiny insects in flowers, is so abundant, and their nests are so well concealed.

A few months before we reached Mexico a certain hummingbird had been tightly curled up in the tiniest

of white eggs. A little later he had appeared as an ugly, naked, short-billed hummerling, sharing the cup of plant-down with his sister, and peering over the rim of the lichen-covered cradle.

We saw him only in his death — the only time we have ever seen a hummingbird which had died from accident. The little fellow, not yet in his adult plumage, had apparently attempted to snatch an insect from a bunch of burr-blossoms. Vibrating a little too near, one wing had become caught, and instantly the tiny body had been precipitated upon the mass of prickles, every struggle holding it but the tighter.

At the southern jungle-edge of the tangle was a great fig-tree, all but throttled with a vine, which twined and knotted its mighty folds about the trunk and branches, until it was hard to say to which belonged the leaves, to which the fruit. Large currant-like berries, with a black stone in each one, hung from the tendrils of the vine. The lessening vitality of the ancient tree had attracted devastating insects, and its vine-shadowed and strangled twigs were wreathed in thousands of webs and caterpillar nests — a perfect feast for all birds, insectivorous and frugivorous.

In this land overflowing with life, we found now and then evidences of tragedies, which had been enacted in the deep silence of the woods — piles of feathers, scattered bones, which told of pursuit and flight, battle, surrender, and death. But we were less

A TRAPPED FAIRY

likely to take note of the struggles to the death, going on all about us, as the various forms of vegetation fought for space and light. Because the movements and the tightening of the great liana coils were slower than any serpent, no less was death in their grip. Octopus-like, they reached upward and dangled their tendrils over every twig, shutting out with their leaves the life-giving sunlight.

These vines seemed of interminable length and of incalculable age. In certain places, huge regular coils lay along the ground, like giant hollow screws. A careful search showed that once these screws embraced some mighty tree, which, suffocated and killed, had given way and crashed to the ground, carrying with it its destroyer. Soon decay and insects attacked its fallen trunk and it sank and merged into the mould.

The vine, unharmed, had bent pliantly, as its victim fell to earth, and with insatiable fingers reached out for other prey. When at last the first light touch of its delicate tendrils felt their way to another trunk, we could almost imagine a shudder of terror agitating the doomed tree. And then the vine grew even more rapidly, vitalized by the decaying body of its first victim which was slowly falling into dust and loam. Here and there a sapling had been passed by the outreaching vine, as if it voluntarily sought a worthier prey.

The new branches, which the trees sent out to escape the embrace of death, were pitiful. The trunk seemed

to buttress itself with aerial roots, as the weight of the vine dragged downward ever more heavily. The poor rooted giants appealed to us, as would birds or beasts suffering in the coils of a serpent, and more than once we released such a tree and gave it a new lease of life — centuries it may be — by severing the vine at its root. When, in the dead of night, the silence was sometimes broken by the distant fall of one of these trees, — a hissing crash followed by the dull roar of the fall, — our feelings went out in sympathy for the monarch which, for so many decades, had withstood earthquakes and storms, only to be vanquished by the insinuating foe, which had climbed up to the light of day by means of the tree's sturdy trunk.

Another phase of the struggles between vine and tree was not uncommon. The vine would throw down numerous roots, which took a fresh hold, and thus, gradually, a dense interlacing of woody stems was wound about the tree, fretting the helpless trunk with an intricate network. The death of the imprisoned tree ensued, but, instead of falling, it was held in place by the vine and exposed to boring insects and Wood Ants, which speedily reduced it to sawdust. Often we saw such a framework of vines from which all signs of the tree had vanished.

Yet all these struggles and deaths were mere incidents in the jungle life. The supremacy of the vine and the death of the tree were two facts which he who

ran might read. But the thousand and one influences, subtle, far-reaching, and powerful, which were woven into each such incident, could only be conjectured. The biography of a tropical tree has never been written. When it is, few books will equal it in interest. All the environment aids its young growth; every influence is turned against it, when once it weakens. The rains, which nourish the surging sap, later filter into every crevice and rot the wood of its very heart. The myriads of insects, which, in its vigour, it has defied, now devour leaf and twig and bore it from bark to bark. The lichens, which before only enriched the loam at its roots, now bring swift decay to its noblest boughs.

Long before our senses can perceive any lack of vigour, word has somehow been passed, and the allies of the fatal vine hasten, vulture-like, to take their part in the unequal struggle. We read of savages sometimes dressing their captives in most elaborate and brilliant clothing before putting them to death. So, when its fate is sealed, the tree occasionally bursts forth into gorgeous bloom — a mock splendour not its own. Such is the case when certain parasites, following the track of the vine, fill the branches, each rooted deeply in the weakened wood, and living on the very life-sap of the tree. These parasites unfold great masses of deep scarlet blossoms, which light up the dark glades of the jungle. Unless a branch is cut off, and the section closely examined, the flowers would be

taken for those of the tree itself, so close is the union of the parasite and its host.

Trees are very sensitive to their environment, and mould the effects of their surroundings into their growth. The stunted firs and spruces at the edge of the Bay of Fundy are permanent witnesses to the terrible winds and storms of past years; every bough and twig reaching landward, away from the path of the blasts. Canadian balsams often grow so close together that their bare stems all but touch, and make it impossible for even a rabbit to creep between, and here we see everywhere signs of the warfare which goes on in the forest.

The reverence which we pay to age should not be denied to a tree, and when we see a mighty trunk uplifted in these thick jungles, we should spare it a thought of admiration when we consider the centuries of constant struggle against animate and inanimate foes, by which alone it has maintained its place and prestige. The great wild fig-trees, which are sometimes overcome by choking vines, occasionally begin life in a most novel way. A favourite nesting-site of woodpeckers is in the soft, pulpy branches of the organ cactus. If it happens that a seed of the fig-tree becomes lodged in one of these deserted nesting-holes, it soon sprouts in the mould at the bottom. The seed develops and sends a long, thread-like root-tendril to the ground, and the ensuing growth may become a

mighty tree, enveloping the cactus, and spreading wide its branches in all directions.

When once we begin to look for evidence of these silent struggles of the jungle, we find them on all sides, and so realistic do they appear, and so strongly do they appeal to our sympathies, that we are again and again reminded of the living forest of which Dante wrote:

> "I heard on all sides lamentations uttered,
> And person none beheld I who might make them,
> So many voices issued through those trunks
> From people who concealed themselves from us;
> Men once they were, and now are changed to trees."

The most delightful time of day in our tropic tangle was early morning, and, indeed, where in the world is it not? At this time the air was cool and fresh, and the vistas along the brook were alive with birds, some bathing and drinking, others gleaning fish or tiny snails from its depths or borders. Little teetering sandpipers and Louisiana Water-thrushes were always in view, and the dainty Blue Heron seemed a regular habitué of this part of the stream.

One morning a Black Hawk swept low through the branches and on out of sight. Hardly had he passed, when eight White Ibises veered around a bend in the stream and slowed up just abreast of where we were seated. Their pink legs were outstretched to alight, when one caught sight of us. He dashed up, and back on his track, and silently, except for a swish of wings,

the other seven turned and followed. Their curved bills and long legs were bright pink and gleamed vividly, as the white cloud of birds winged its way northward over the tops of the palms.

Having need of the skin and skeleton of a Black Hawk, I shot one of these birds not far from camp, and only when too late, I found that it was one of a pair which had built a nest overhanging the stream. Shortly after the death of her mate (for my specimen was a male bird) the female returned and alighted upon the nest. It was built in the top of one of the liana-encumbered trees, which was draped and hung with a thick mass of entangled vine-cordage. By pulling myself up these slender rope-like lianas, I was able to look down into the structure, without once touching the trunk or branches of the tree itself. The hawk left the nest as I reached it. I found nearly a bushel of rough sticks woven compactly together, and a thick lining of fresh willow leaves had been recently added, but there were no eggs. My regrets at having shot the male were needless, for the very next day I found that the bereaved bird had found a mate and both were carrying more leaves to add to the lining.

In this same tangle, there once came to us one of those fortunate moments which remain so long in one's mind; one of those settings around which memory groups the details and lesser happenings. A Belted Kingfisher rattled on a branch overhead, and the sight

and sound quickened our breath. For an instant apple-trees, high river-banks, and a quiet mill-pond replaced palms, bamboos, and the dark, jungle-stained pool. But only for an instant, for, from upstream, a second kingfisher form came into view and swerved up from its water-skimming flight to a low perch across the pool. A little green and white Texas Kingfisher quirked his head downward, glanced quickly at us, as we smiled at his diminutive figure. As if to reproach our amusement, he dived like an arrow, splashed beneath the water, and returned to the perch with an inch-long minnow. Surprise must indeed have been written on our faces, as a third kingfisher — a giant of his race — flew swiftly toward us and perched near his pigmy cousin. How insignificant the Belted Kingfisher now seemed! He fairly shrunk before our eyes, as our gauge of development shifted to the newcomer, the great Rufous-bellied Kingfisher. To our eyes, the two extremes seemed comparable to a sparrow and a raven. Two charges of shot and a millimetre rule would, doubtless, have shown this to be an exaggeration, but we were content to let them live and refer to our handbook for measurements.

The big cousin was a handsome bird, with his warm red under parts set off by the bands of blue and white across his breast. We waited eagerly to hear his voice. But his rattle was not so clear nor so loud and penetrating as that of our Belted Kingfisher.

We shall never forget the trio of birds perching so near together — a small congress of all the species of kingfishers which find their way into the southern part of our own country. The least of the three was the first to leave, soon followed by the Belted. The great Rufous bird looked about him, his eye rested upon the water, and without hesitation, he dived downward and rose with a six-inch fish from the pool. Verily I believe if the Belted Kingfisher had dived before he flew, he would have secured a *three-inch* minnow! A mile or two from the tangle was a little dry, sandy *arroyo*, inhabited by a single Texas Kingfisher. There was no water near; nevertheless, here he might always be found, dashing after grasshoppers and butterflies and snatching up diminutive lizards, as skilfully as ever one of his race caught a fish. It was amusing to see him, after each of his sallies, flirt his plumage and wings, instinctively shaking imaginary drops of water from his feathers.

TEXAS KINGFISHER, FISHING ON DRY LAND

As one walked through the tangle, a large dark object would sometimes loom up in front, suspended among

the branches, five or six feet from the ground. These were hard earthen ants' nests, roughly circular in shape and sometimes a yard or more in diameter. In

ANTS' NEST IN TREE

several instances I found where parrakeets had burrowed deep into them, forming a chamber at the end of a long, narrow entrance. Whether they did this to feed upon the small architects, or whether they actually

used these curious structures as nests, I could not determine.

Now and then our old friends the Long-tailed Blue Jays visited our tangle, whereupon we promptly left it, knowing that their shrieks and cries would, for the present, put an end to the bird-study in that vicinity. Once, several of these annoying birds dashed into sight, wild with excitement. Their longest tail-feathers were gone, and in general they presented a hopelessly bedraggled appearance, being apparently in full moult. The object of their persecution was a hawk, one of the finest of the Mexican birds of prey, and by far the most strikingly marked. It is well named the Laughing Falcon, for at times its call is remarkably like the human expression of mirth.

The colouring of the bird is a harmonious blending of brown, creamy buff, and white, but the most prominent characteristic, visible at a distance, is a broad band of black through the face and eyes, bringing instantly to mind the markings on the head of a raccoon. We saw these hawks on the trail to Colima, sailing about, for hours at a time, high overhead. They are gentle birds, and when one was stunned and kept captive for a few days, it soon became tame and took its portion of food from our hands.

The most beautiful of all the small birds was a bunting. We christened him the Rainbow Bunting, but the books call him the Leclancher Bunting. These little

finches flitted through the underbrush in pairs, searching for insects and seeds among the leaves or mounting to the top of a small bush and giving voice to their joy in a little ditty, the attempt at which was most to be admired, for the twittering ended in promise. Their beauty and vivacity evade all description. A photograph would convey nothing of their charm. Try to imagine a little feathered sprite, less than five inches in length, with a crown of apple-green; cheeks, back, wings, and tail of turquoise-blue; throat and under parts of clear lemon-yellow; with a band of delicate orange across the breast! His mate, who follows him so faithfully and listens to his pitiful song so admiringly, has the greens and yellows in softened, indistinct hues. Altogether they are charming little birds, living in a region where their beauty falls only upon such unappreciative eyes as those of vultures and coons.

Half-wild cattle now and then roamed through the surrounding jungle, watching us, wide-eyed, until we were out of sight. Their narrow, winding paths rendered accessible the densest and most briary thickets, fortunately for us.

Each animal was invariably attended by a following of birds, which perched upon its back, or flew close to it through the bush. They were Groove-billed Anis, and they relieved the cattle of the ticks which cause the poor creatures such torment. The Anis also picked

up a good living of insects which were disturbed by the hoofs of the animals. When a steer began cropping the short grass of some jungle lawn, a circle of these slim black birds kept close to the muzzle of the beast. He seemed to recognize their useful offices and never attempted to molest them. They are strange, loose-jointed birds, their wings hanging flimsily and their long tails blowing about in the breeze, over their backs or between their legs. Even in flight, their wings and tails seem each moment about to fail in their respective functions. When their bovine comrades lay down to rest for the night, the Anis roosted upon their broad backs.

The most interesting bird which revealed itself to us in our brookside tangle was a species of wood-hewer. At first sight one got an impression of a gigantic Brown Creeper, and no wonder, for as far as the literal meaning of that name is concerned, it was brown and it crept up the trunks of trees. As in the case of the trogons, motmots, and parrots, this bird was almost at the northern limit of the range of its family — the *Dendrocolaptidæ*, or wood-hewers. Farther south in Central and South America the members of this group form no inconsiderable portion of the avifauna, numbering some two hundred and twenty species. Among these are birds which are found on the open pampas and which are, of course, terrestrial in their mode of life; others are found on or near the ground in dense

forests; while an even greater number have the habits of our Brown Creepers. The Swainson Wood-hewers

THE LAUGHING FALCON

which we saw were so timid and silent that they were difficult birds to find and to watch.

The Laughing Falcons had uttered no sound within our hearing, until we found them in these tropical

lowlands, but here they made up in full measure for this silence ! The call of the loon is weird, the coyote's voice most lonesome, but, for pure diabolical utterances, commend me to the Laughing Falcon and the Chachalaca, the acquaintance of both of which birds we made early one morning. We were forcing our way through a dense swamp, miles back in the jungle. The finest ferns I ever saw stretched high above us, their lacework fronds six and eight feet from the ground. Huge elephant ears, several feet across, sprouted from the black oozing ground, and many odours, spicy and aromatic, filled the air. The delicate growths of filamentous algæ beneath the surface of the water looked as if nothing had disturbed their green thread-like leaves for years.

Few birds were here and no humming of insects was audible. The steaming air was so heavy with pungent earth and swamp smells that one imagined that all low sounds were deadened and lost. Here and there a dry hummock rose from the swamp, covered with short lawn-like grass and great running vines of convolvulus. From one of these a Boat-billed Heron flew up, with a croak. Another parody of Nature and this time on our Night Heron ! In voice, actions, and flight this tropical bird is an exact copy of our large-eyed nocturnal heron, but its broad, flat bill is as different as is the bill of a gannet from that of a pelican.

This bird was fearless and perched near by in full

view. From the soiled condition of its bill and the discolouration of the water I thought that its breakfast had consisted of the worms and snails at the bottom, rather than of the usual fish diet. We often heard these

THE COON HAWK

Boatbills flying over the camp at night and uttering their discordant squawks.

Near the edge of the swamp, we were startled by a sudden snarl, and a long-tailed, dark, furry creature dashed off through the bushes, springing silently over the soft mould. We had no idea as to what it was, but we found its tracks to be small and cat-like. Searching the place from which it sprang, we came across a scattered mass of bones and dried skin, which the vultures had evidently picked clean. The skull of the creature was in almost perfect condition, and we preserved it for identification. It proved to be that of a Yaguarondi, a Mexican cat which we had never expected to find in this part of the country. There was very little doubt that the animal which fled at our approach was also of this species, and a few minutes later another, clearer view proved that our surmise was correct.

THE SKULL OF A YAGUARONDI

What could have been its errand near the bones of its dead comrade? Piles of scattered feathers here and there in our path showed where unfortunate Boat-bills had fallen victims to Yaguarondis, or to other beasts.

BOAT-BILLED HERON

We reached dry ground at last and seated ourselves on a fallen log. For a moment the silence was unbroken. Then a fearful voice arose, apparently coming from all directions at once. Cacklings, screechings, wheedlings, peals of uncanny laughter! The screams of macaws dwindled to mere whispers beside this awful din. It gave us the greatest shock which we experienced on our trip. One prominent factor in the medley was a most peculiar subdued humming which, beginning low, gained steadily in volume, until it ended in a shrill falsetto shriek. A more terrifying sound can hardly exist.

The authors of all this uproar soon made their appearance, a small flock of dark, fowl-like birds, which we recognized as Chachalacas. They flew from tree to tree, or ran frantically round and round in circles upon the ground, uttering screams and the strange humming cries, but no sound bearing a resemblance to the clear, ringing *cha'-cha-lac!* with which we were familiar in captive birds. The other performers in this strange chorus were perched high in the trees, a quartet of Laughing Falcons, which easily held their own. Such awful shrieks of mirth were never fashioned by human throats, and the weirdness of it all, breaking so unexpectedly upon the silence of the jungle, made it all the more startling.

Before we reached camp we were able to add the Collared Peccary to our list. Three of these wild pigs snorted in alarm, as we approached a glade, where the underbrush thinned out. They peered at us with their queer little eyes, and, with frantic grunts, they tore off as fast as their short legs could carry them.

We heard rumours of large blackish *Osos* (the native word for bear) in the low mountains to the north of us, in Jalisco, and I obtained the tooth of a bear from a native hunter. Another Indian had the tiny horns of a deer, shot in the state of Michoacan, a little distance to the south. The deer was described as very small, and always as having unbranched horns. I could

not persuade the man to give them up, but a close examination showed them to be those of the Brocket,

ANTLERS OF BROCKET

— probably the Black-faced species. The hunters said that these deer lived in the densest jungles and that they were very fleet runners. I could secure no more facts concerning this little creature — the smallest of the Mexican deer.

The hunters hereabouts were familiar with the jaguar (*tigre*), and a smaller spotted tiger cat, or ocelot, which they call *huinduri*. When I described the Yaguarondi, they exclaimed *leoncillo*. They speak of the Peccary as *la havelina*.

I was very anxious to see curassows and guans which were said to be found in the jungles not far from our camp, and when I described, as best I could, these birds to a Mexican, he exclaimed that there were a number of tame ones at a neighboring *hacienda*. We rode there one morning, six or seven miles through thick forest and marsh, I lugging my largest camera, only to find, instead of the anticipated guans, a bevy of gobbling domestic turkeys. The disappointment and chagrin of my Mexican guide, when he saw that they were not what I had expected, made it impossible to be out of temper with him.

One day while walking quietly through a dense part of the jungle, where tall, thick-leaved trees shut out the light and hence caused an absence of thick undergrowth, I saw a bird fly from a perch, catch an insect in mid-air and dart back. I had not found any flycatchers heretofore in this thickly wooded section, and, though my heart sank when I saw its back and wings of the usual indefinite flycatcher-hues of light gray, and knew that exact identification without a gun would be next to impossible, I approached the bird. It again flew into the air and again returned to its favourite

twig, this time facing me, when one glance removed all doubt as to its identity; for its breast was stained a rich pink, which burned out brightly amid the dark shadows. It was the Xantus Becard, the second member of the family *Cotingidæ* we had met. From time to time it uttered a low, indefinable lisp, and soon flew away. Three other individuals were seen after that, all solitary, all flycatching, all in such deep woods as our Wood Pewee would love.

With all these interesting birds about our camp, how I longed to spend weeks of exploration among these jungles and marshes, where, later in the season, the birds would all be in song, building their nests, or feeding their young!

Early in the morning of the day that we planned to spend at Manzanillo, we learned that the train passed much earlier than we had expected. So, without breakfast, we mounted two half-broken horses and rode at a breakneck gallop, mile after mile, through the jungle trail, dodging boughs, spurring the animals out of morasses, and at last found ourselves seated in the narrow, dusty car.

Soon the green woods and bushy meadows gave place to the rainless death — a desolate country of parched grass, leafless trees, with dust, dust, everywhere. If anything could exceed the dust, it was the heat. Before we reached Manzanillo we passed along the great lagoon which has made Manzanillo one of the

most unhealthy cities in the world. Not a ripple stirred the expanse of green slime which stretched away and away. Here was stationed a motionless Great Blue Heron or a Wood Ibis, there a Cormorant perched upon a dead snag. It must indeed be terrible to the poor people, who are forced to live at Manzanillo, to watch the annual cutting off of the outlet of this great ocean-fed lake, to see it become more green and slimy day by day. Finally the myriads of fish struggle and leap ashore in windrows, fighting for oxygen, and then the terrible stench carries death on every breeze. We passed the great cut through the hills to the sea, which, it is hoped, will put an end to this peril.

A few minutes after passing the sinister expanse of the lagoon we reached the harbour of Manzanillo, and there lay the Pacific — so deep and blue and pure.

> "Then felt I like some watcher of the skies
> When a new planet swims into his ken;
> Or like stout Cortez when with eagle eyes
> He stared at the Pacific, and all his men
> Looked at each other with a wild surmise,
> Silent upon a peak in Darien."

We had but two hours before the train made its return trip — only long enough to walk to the beach, over the intervening hill, eat our lunch beside its booming waves, and return. On the way we were interested to see large cotton-trees, the new source of

Waite, photographer

THE HARBOUR OF MANZANILLO

this material and one which is not subject to the attacks of the boll-weevil. There is said to be a great commercial future for this plant. It was a strange sight to see a strong tree, thirty or forty feet high, with the branches and twigs all tipped with overflowing bolls of soft white cotton.

Few harbours are more beautiful than this harbour of Manzanillo; a great curving bow of blue water, surrounded with low hills, with the tiny red-tiled adobe houses nestled close to the shore at one side.

We chanced upon a little beach of whitest sand shut in by cliffs, tunnelled and turreted by the centuries of storms. Here the Red-footed Boobies fished, diving magnificently just beyond the surf. California Brown Pelicans watched us from tiny wave-carved islets, offshore. The foam tossed delicate lavender shells and jelly-fish discs at our feet, and the cool sea-breeze blew away all remembrance of the heat and dust between us and our camp home.

Gradually, day by day, so slowly as to be almost imperceptible, a change came over the country. At first we did not speak of it, so evanescent it seemed. But its influence grew — it became a *zeit-geist*, intangible but all-pervading, infused through the air, stirring plant, animal, and man.

Earthquakes were of nightly occurrence now, and

often our cots swayed and creaked with the strange motion, and our canvas roof undulated, when not a breath of air was stirring.

The days were growing longer and more spring-like. No rain had fallen for many months, yet a freshness was spreading over everything. One night, a mighty chorus of frogs arose, a rhythmical bellowing, which reverberated through our little glade. The undertone of nocturnal chirping and fiddling small folk increased in volume. The twitterings of migrating birds came to us in our tents. Flowers became more abundant, quickened by some unknown source of moisture. The occasional combats between the little furred creatures which haunted our camp became more fierce and decisive.

One day about four o'clock in the afternoon, a tiny cloud obscured the sun for a moment, something very unusual at this time of year. The following days, at the same hour, larger and still larger clouds passed across its face. We knew at last what it all meant — the rainy season was rapidly approaching, and all Nature was awakening to welcome it. The dusty country, except close to the stream-bed, ached for moisture. This was the spring of the tropics — a change not so much from cold to heat, as from dust to life. The most parched, heat-cracked places now showed a little green. Light thunder was heard now and then, and one day, without warning, great drops

of rain fell heavily — the first we had experienced on our trip.

Flycatchers and other birds were carrying nesting-materials, and renewed activity animated every creature; insects were emerging from chrysalids and eggs on every hand; but our time was up. Like the passing migrants, but with the greatest reluctance, we must begin our homeward journey.

Well is the nesting-season of the birds in these lowlands protected from man's disturbing hand. The volcano had stirred in its half sleep, the daily drenching rains had begun, and a black and silent death had passed us in the night — small-pox had broken out among the Indians near by. If we delayed longer we might be quarantined against the railroad, so we dared not wait.

As we packed our tents and baggage, a circle of squatting Mexicans and Indians formed around us, and when at last all our belongings were on mule-back there was an eager rush for the odds and ends we had thrown away. Everything must be solemnly wrangled over and fairly divided. One secured my old butterfly-net, another a cast-off ruby lantern, and another a bottle half full of formalin. We tried to impress upon him that if he drank the innocent-looking liquid his head would soon resemble the skull on the label. But he evidently thought he was being cheated out of a good drink, so to remove

all temptation, I poured it out on the ground. Every bit of paper, cotton, and string was treasured, while pins and candle-ends were treasures to be eloquently argued over.

As we rode slowly to the station, the birds seemed to gather in greater numbers than I had seen them at any time before, and the air was filled with the calls of quail, and the cries of parrots and yellow fly-catchers.

The kindness of our Mexican friend and his family sinks deep into our hearts. Hospitality and kindness suffer nothing because dealt out from beneath a *sombrero*.

Wherever we have made camp, there was always some one, a half-grown boy generally, who, seizing the opportunity of our visit, came from the nearest village and made himself so useful to us that we were glad to teach him a little English and help his eager and ambitious spirit to some knowledge of the outside world.

At this last place, Maria Dolores, a daughter of our Mexican host, was the brightest and most intelligent of this class of Mexicans whom we had met. It was remarkable how readily she learned English words and phrases. She became very fond of *Señorita*, and at parting, pressed upon her her choicest gift, some *dulces* made of the organ cactus. Her sorrowful *Adios!*

aroused our pity. We wished that we could help her to see the outside world for which she longed, and which, like most Mexican women, she was probably destined never to see.

WHERE SWAMP AND JUNGLE MEET

CHAPTER XIV

AROUND THE VOLCANO BY MOONLIGHT

BEFORE starting on the long trail back to Tuxpan, we spent an evening in the city of Colima. This, owing to its isolated position, is one of the most typical of Mexican cities.

The evening was a perfect one and the band in the *plaza* was excellent. The orange-trees were in blossom, and the little park was full-flowered. The governor's palace, at one side of the *plaza*, is Moorish in design, and when the great yellow moon rose behind the graceful building, its minarets and turrets were thrown into sharp, black relief.

In the bare light of day, the filth, rags, and squalor, the low brows and bleared eyes, the tumble-down, flimsy houses cannot be hid from view. But night and the soft tropical moonlight changed all. It was impossible to recall the unpleasantness. The rough-walled houses were softened in outline; the tumble-down became the picturesque. The slouchy step of the people was now befitting, as they strolled slowly about the thronged *plaza*, for it was Sunday and a gala night.

The torches flare and flame, the *frijole* fires sparkle, and the venders of *dulces*, and many curious nuts and fruits peddled by scores of women, add a foreign

THE VOLCANO FROM THE CITY

touch to it all. *Sombreros* and *serapes* reflect soft hues, and the swarthy faces and dark eyes of the Mexicans look curiously out at us as we pass. Once or twice we meet a brown-skinned American prospector or miner, distinguished by a battered felt hat and an open revolver holster. He greets us, as only an American can who is isolated in such a distant corner of the world.

Every native is an innate lover of music. The Spanish melodies of the skilful musicians touch one of the deepest chords in the hearts of the Mexicans, and arouse in the usually stolid faces an enjoyment and appreciation which makes them seem a different race of people.

A sudden realization of the two-sided Mexican character comes to us. No matter how one's patience has been tried by diurnal barterings and *mañanas*, or one's sense offended by unpleasant visions, one is glad to have the chance to mingle with the Mexicans in the evening, and to revel in their music.

This is the ideal side of their life. If the feeling and inspiration of the evening could be spread out to cover their whole existence, the average low type of Mexican would soon rise to higher things; other and better desires would fill his heart than cock-pits and bull-fights, gambling, and the terrible *tequila*. What else can bring about such a change, who can tell! *Quien sabe!*

Next morning, when the stars began to dim in the east, we were up and ready to start on the trail. A new side of the Mexican character was revealed before we mounted. Our Mexican boy had had a bundle of clothing stolen and a straw *sombrero*, and, curiously enough, the thief replaced the latter with a more valuable headgear.

Thus far we had not suffered from the proverbial

Waite, photographer

CITY OF COLIMA IN EARLY MORNING

thievishness of the Mexicans, except that once in camp a can-opener disappeared. This was at the time serious enough, for we found that a hatchet or stone, instead of opening a tin can, merely changed its shape from a cylinder to a flat disc, then to a rectangle and to other geometrical figures, the contents being as inaccessible as ever!

In former days, conditions were much worse, and bandits more numerous than now. A traveller in Mexico writes that, not so many years ago, the stage-coach running between Guadalajara and Zapotlan used to be held up regularly, sometimes at several places on one trip.

"The highwaymen who came last would take from the passengers even their underwear, though with inborn chivalry they allowed the ladies to keep their crinolines. The unfortunate travellers would arrive at Zapotlan gowned in newspapers and the curtains of the coach. Whenever the curtains were seen not to be in their proper places it was at once understood in the town what had happened. On one occasion the soldiers guarding the road succeeded in catching the captain of a gang of brigands. They placed their prisoner on a donkey and took him to the nearest village to deliver him to the magistrate. But when they inquired for the judge, the people replied, 'There you have him on the donkey!'"

The present administration has brought the Republic

much nearer the standards of civilization in this, as in many other respects.

Our guide left the animals unguarded for a moment, and when we came out of the hotel, a new bridle had disappeared. The man shrugged his shoulders, accepting the theft as a matter of course, and proceeded to fashion another of rope. Shortly afterward, while I was watching the pack-train, the unbridled horse took fright and dashed off down the street. I stood helpless for a moment, then I leaped into the nearest saddle, to start in pursuit. But during the instant that I was undecided, another was acting. A venerable Mexican, wrapped to the eyes in his dirty *serape*, was passing. The instant that the horse started, the old man threw off his blanket, reached for the lariat hanging at a pommel, swung it swiftly about his head, and flung the whole lasso after the horse, now some distance away. It took all his strength, and the effort was so great that he fell to his knees, but the tangle of rope flew true. Like something alive, it whirled through the air, twisting and writhing. Then the long loose end trailed out behind and the noose settled, with exquisite nicety, over the head of the fleeing horse. The animal stumbled on the dragging end, felt the pull on his neck, and stopped instantly. Paying no attention to my expressions of admiration and thanks, the aged Mexican picked up his blanket, muffled himself in it, and went on his way.

Never had I seen a more remarkable feat, accomplished so instantaneously and with such perfect judgment: by a man, too, whose age would have seemed to preclude all activity.

COLIMA GROUND SPARROW

At this early hour the streets were almost deserted. Venders of water, with their *burros*, each laden with a quartet of *ollas*, clattered past. Our ride at sunrise

out of the city, and along the first few miles of the trail, was as perfect as a glorious spring day in the tropics could make it. Flowers and fruit were everywhere, the woods and fields were fresh and green, and so clear was the air that the gray slopes of the volcano seemed but a mile or two away.

The Black-and-white-headed Colima Ground Sparrows were in flocks all along the roadside. At first glance, they brought to mind our White-crowned Sparrows of the North. They have an even-toned, continuous, and jumbled-up ditty, which, when uttered

OLD SPANISH BRIDGE

in chorus, is very pleasing. Black-headed Grosbeaks were also here in numbers, and Meadowlarks sang from the meadows, in tones far sweeter than those of our Northern bird. Once a Nonpareil Bunting flew swiftly past, — in full gaudy dress of blue, green, and red.

Later in the morning, a film of cloud tempered the heat of the sun, and our little cavalcade clattered merrily over the cobbles. Yes, real cobbles, but not the rounded, closely laid affairs of our city streets. This was an old Spanish road, and one may read, in the relics of its elaborate construction, much of the ambitions and failures of the masters of the past. It started out a wide, well-defined roadway, paved with regular-shaped stones, a diagonal pattern of larger cobbles woven through the whole. But the work became less and less carefully done as we proceeded, until finally the skeleton pattern alone marked the path for mile after mile. The trail, however, even as far as Tonila, was for the most part well built and levelled, and some of the bridges were of remarkably firm construction. For many scores of years they have withstood the floods of the rainy seasons. We were told — and indeed we saw proofs of it — that when, for any reason, it was necessary to destroy this centuries-old masonry with dynamite, the cement held firm while the stones gave way. There is a saying that the mortar used was prepared a year in advance.

Each step took us higher, nearer the volcano. The singing sparrows gave place to Western Blue Grosbeaks and Varied Buntings, the male birds reflecting tints of blue and purple, their mates feathered in dull leaf-brown. The latter species occasionally uttered a rather sweet but simple song.

In some places the trail was level and straight for miles, and on the bordering stone walls great Iguanas sunned themselves, or crawled lazily up among the bushes. We could look ahead and count fifty or more of these black saurians at once. Their curiosity held them still for a moment, even after we came abreast of them, and I amused myself trying to photograph them with a kodak. I would set the shutter and fix the focus for about eight feet, and then trot past on the opposite side of the trail. Turning suddenly, I would spur the horse, with one or two great leaps, straight up to the lizard, point the camera at him, and, if I was lucky, take a picture. If I was a fraction of a second too slow in getting my balance, my film would record only the mane of my horse, a bit of cloud, or a pile of stones. One soon gets, instinctively, the knack of levelling a camera, just as, after long practice, a man learns to shoot a revolver accurately from his hip.

Just as the heat began to grow oppressive, we reached Tonila, and engaged a room, intending to finish our journey next day. But after resting a few

THE OLD SPANISH HIGHWAY

hours we felt so refreshed that we decided to go on. No woman had ever covered this trail of sixty miles, from railroad to railroad, from coast-level to table-land, in one day, and *Señorita*, with her indomitable spirit, had a keen desire to be the first to accomplish this feat. It must be remembered that sixty miles in this country means far more than the same number over level, even paths.

Toward sunset we set out slowly, for by far the hardest part of the trip was before us. The gradually ascending slopes were past, and we plunged down into the first of the many *barrancas*. While leading our

animals down a steep, rock-strewn cliff, a little company of mourners passed us in the twilight. At the head of the company two men were carrying a tiny coffin, slung between them, on a pole. We stopped one of the followers and questioned him. He told us that a little brother and sister were rambling along the depths of the *barranca*, when an *animo* — a spirit of the dead — appeared suddenly to them. The little fellow dropped dead from fear, and his sister had gone insane, raving ever of the terrible apparition. Such was the pitiful story, reflecting the weight of superstition which clouds the minds of these simple people.

The wonder of the closing hours of this day will ever remain a vivid picture to *Señorita* and to me. Even our stolid *mozo*, distracted by the vagaries of two obstinate pack-mules, was strongly affected by the scene. An unusually large quantity of white smoke is pouring from the fire volcano, a few miles away. After forming the usual flat, table-like mass above the crater, this smoke drifts westward, and fills that whole quarter of the heavens with soft, dense folds of palest blue. The sun has been hidden for some time by these clouds. Indeed, we have thought it already sunk beneath the horizon, when, unexpectedly, yet with the deliberation of a planet's motion, it emerges, shines for a moment with a full blaze of yellow light, then mellows again into obscurity.

What follows seems a direct result of the momentary outpouring of glory. As if the sun's rays had ignited the pale clouds above the living crater, they take to themselves a soft rose hue. This grows and grows,

THE VOLCANO IN ERUPTION

more warm, more brilliant, until the height of colour is reached. The sky and bank of clouds beyond the mountain are of the darkest blue, while the sharply defined column of white steam ascending from the crater is stained a fiery red on the side toward the sunset. From this point the red is spread out in an ever-widening path, its brilliancy softened until, in mellow tints of roseate haze, it warms the whole western sky. Earth-flame and sun-glory — the one the daughter of the other

—seem once more united. The fearfully red glow at the crater's edge is, to the eye, translated, until it seems to feed and flow and merge into the splendour of the setting sun.

Never shall we forget our parting night with the volcano. During the next two hours of our ride, while the fading light of the afterglow is replaced by the fitful, flickering light of the living volcano and the thin star-gleams from Orion and Leo overhead, the gradual changes are no less impressive.

The red becomes rose; the rose salmon; then only an evanescent yellow tinge remains. Finally, the sunset gone, the great mountain draws a cloak of steaming mist about its jagged shoulders, and, with a low, hollow rumbling, settles into the quiet of night, reflecting indistinctly the hue of dead lava, which it assumes when the world is dark. The clothing of pines about the lower slope seems to hug more tightly to their scanty-earthed root-hold. At one side a fresh, seared line shows where a small crater has recently opened and consumed the upper line of trees, — the trunks and roots melting to nothing before the terrible outpouring. Actual molten lava seldom escapes from the lofty crater, hot ashes and stones being the most common form of eruptive material.

The mood of the mountain soon changes, the ground quivers beneath our horses' hoofs, the trees rustle their

Waite, photographer

THE TRAIL NEAR TONILA

leaves while there is yet no wind, a rumble comes to our ears, deeper than the roar of the sea, more solemn than the reverberating groan of thunder. Then the fumes about the mountain lift and drift apart, and there, clear and distinct against the black of the sky, we see the play and quiver of the fitful flames. A stoic indeed must he be, who is not deeply moved by such a sight; the ancient peak, so cold, so dead, and yet at centre so vibrant with the everlasting fires of earth. It is the most awe-inspiring — the most beautiful sight in the world.

We advanced at a snail's pace in the darkness, letting the sure-footed pack-animals lead the way. At the very brink of the great Barranca Vueltran is a crumbling wayside corral, where pack-trains, laden with sugar and cocoanuts, stop for the night. This wayside house goes by the odd name of Conejo — the rabbit. Here we unsaddled and waited for the moon to rise, before descending into the dark gorge.

After some *chócolátl* and *frijóles*, we sat on a pile of saddles and listened to our guide, as he sang Spanish love-songs to the daughters of the host. It was truly a Mexican scene. At one side a blaze of light comes from the open door of a smoky little room, where a party of muleteers are gambling — shuffling and dealing the curious cards of the country, with gold balls, platters, wooden clubs and crowns, instead of the usual hearts and diamonds. Our guide, leaning against one

of the innumerable hitching-posts, sings to the accompaniment of a guitar, in a clear tenor voice, *Paloma*, and that most beautiful of all Mexican songs — *La Perjura*. An old, old shrivelled Mexican is squatting in a corner and mumbling to himself. When we speak to him, he answers in the quaintest of old Spanish proverbs, but will not talk of himself or of his life. The moonrise was still an hour away, and we watched the volcano burn on and thought of the last great eruption, when a sheet of flame shot high in air, and huge stones were thrown out, flaming in great

THE TWIN MOUNTAINS AT NIGHT

circles of fire, while sand and pebbles rained down upon all the country hereabouts.

At last the lop-sided moon drifted above the opposite wall of the *barranca*, and we said *Adios!* and

remounted. On our strong horses, *Señorita* and I soon distanced the plodding pack-mules and found ourselves far ahead. The muleteer was a trusty one, so we decided not to wait for him, but to go on alone. Up the winding trail we climbed, criss-crossing the face of rocky cliffs, next a gallop over a level moonlit stretch, and then a plunge into another dark, shadowy *barranca*. Ten or twelve miles passed, and we were confronted with a toll-gate, tightly locked. We learned from a sleepy Mexican that the keeper was at Platina, a village some five miles back on the trail, and that he was very likely dead-drunk.

In vain we tried to find a place in the stone wall over which we could leap our horses. In vain I offered the man a *peso*, if he would get the key. We knew that the Mexican Central train left Tuxpan at half-past four in the morning, and the moon was already high overhead. The chain was heavy and the lock indestructible, but there was a flaw in one of the cross-bars of the gate. *Señorita* held my horse while I took a run and threw my full strength against it, and at last it gave way.

An Indian came down the hill behind us, and although he knew little Spanish, the situation was plain to him. He kicked the sleeping Mexican, who paid not the slightest attention, and then he helped me. With a few hard rushes we had the gate scattered over several yards of hillside. I had little fear of the con-

sequences, as the gate-keeper should have been on duty all night.

The weirdness of our ride through the long, long night fascinates us both. We are wide-awake, every sense on the alert. Scattered clouds pass across the moon, shadowing the trail and changing the spreading yellow-barked trees into dim ghosts. Now and then some creature scuttles from our path; twice the ominous whirr of a rattlesnake sets our horses a-quiver. Deer splash away from the shallow fords, where we cross the streams. Bats fan our cheeks, while ever the scarlet-capped *volcan* watches over us.

We rode a little out of our way to pass our *arroyo* camping-place. Its shrivelled barrier of thorns, and the scattered bits of paper, were just as we left them a month ago. A feeling of sadness came over us as we passed, for the last time, the well-known places; the trees and rocks which we knew so well, each fixed in our memory by some association. All was silent and white in the moonlight. The wildness and desolation of this untamed country seemed more pronounced here, where once our home tent had been pitched.

Although rain had not yet fallen at these high altitudes, yet the stream in the Barranca Atenquiqui had risen greatly, flooding our first camping-place. This was the last deep gorge on the trail, and, as we came out upon the high land, we broke into a gallop. Only eight miles now separated us from Tuxpan, and the

horses shook from their limbs the stiffness of the long stretches of walking and climbing, and now raced eagerly along.

We passed a family of Indians on mule-back, probably just setting out for Colima, and they told us that it was after four o'clock; a party of soldiers shouted to us that it was but two hours past midnight. And so we were alternately disheartened and encouraged, until we rounded the last curving hill and saw the rear lights of the Guadalajara train. It was four o'clock and we had made the sixty miles in fourteen hours of continuous riding!

The conductor congratulated My Lady upon her pluck and daring, and held the train for us as long as he dared, but still our baggage did not arrive. We learned later that the irate drunken keeper of the demolished toll-gate delayed our baggage-mules and was thus the cause of our missing the train.

As the train rumbled away, we turned and rode slowly to the Hotel Central, just as the east was brightening with another day. The moon, which had guided us so steadily through all the night, paled and sank slowly behind the cone of the volcano.

Days pass, we recross the continent, and our last Mexican sunset dies out behind the mighty peak of Orizaba. As our steamer leaves the harbour of Vera Cruz, the first rocket of the Easter *fiesta* shoots up-

ward, curves, hangs suspended for a moment, and then bursts into a cloud of coloured stars, and as we pass the end of the long breakwater, a solitary Mexican sends a final, musical *Adio-os!* to us, across the water.

A LUCKY SNAP WITH A CAMERA

CHAPTER XV

HOW WE DID IT

By Mrs. C. William Beebe

WHEN we decided to spend the winter camping in the wilds of western Mexico, we were almost as much at sea as to what to take with us as if we were contemplating a trip to the planet Mars! In vain did we read books on Mexico. All had much to say of the interesting history of the country, of its exports and imports, of the courtship of the fair *señoritas*, of the cruel bull-fights, etc., etc. But of the wonderful nature life of Mexico — scarcely a word; and as to advice to any one wishing to leave the beaten line of travel, and to camp in the wilderness — there was *none*.

After infinite deliberation we finally settled upon an outfit, which proved to be, in most respects, all-sufficient and which was also inexpensive. We did not risk buying things in Mexico, for all imported articles are very expensive there, and many things cannot be procured at all.

I am sure that any one who has before him (or her) the delightful prospect of camping in Mexico will find

many helpful suggestions — and some warnings — from the way we did it. The warnings, however, I will try to make serve the useful purpose of pointing out the way *not* to go.

If one wishes to travel with the least possible worry or trouble, and to enjoy unfailing courtesy and delightful service, let him go to Mexico via the Ward Line, and when once in that country purchase his tickets on the lines of the Mexican Central Railroad.

When one reaches Mexico one exchanges one's American money for about two and a fourth times its value in Mexican coinage, but this sudden increase in numerical amount should not blind one to certain facts which it is well to keep in mind. Careful inquiries should be made concerning those States which are bankrupt, or whose bank-notes are, for some reason, depreciated in value. All such should be refused.

When striking out into the wilderness, carry few bills, or none at all, as the Indians are averse to taking them; though they readily accept small change or silver *pesos*. A little change goes a long way in an Indian village. All large amounts should be carried in the form of drafts on New York banks, in preference to ordinary American currency.

With us the first consideration was lightness; partly because the Mexican railroads allow only one hundred and ten pounds of baggage to each person, which is forty pounds less than is permitted in this country —

all excess baggage being charged for according to the regular express rates; and also because, after leaving the railroad, everything must be packed on mule-back over the steep trails. If one's husband is a naturalist, one necessarily travels with much that is heavy — photographic plates, bottles of formalin, guns, ammunition, etc. I always say that our trunks contain everything except clothing.

I will begin with what one must wear. A man will find that an ideal costume for camping is a soft felt hat, a khaki hunting-coat and knickerbockers, canvas army leggings, ordinary heavy shoes, never, if he values comfort and peace of mind, high hunting-boots and long golf stockings. They are both too warm for the climate of Mexico, as well as affording excellent lodging-places for fleas and other insects. A supply of soft blue flannel shirts, such as the Western cowboys wear, will be always comfortable and useful. Sweaters are necessary, for remember that this is a winter trip, and, although the days are warm and one will then hate the very sight of a sweater, yet the nights in camp are cool and sometimes even cold.

To the woman who is courageous enough to defy the expostulations of her friends and to undertake a camping-trip to Mexico, let me say that I congratulate her on having before her one of the most unique and fascinating experiences of her life; that is, if she goes

in the proper spirit. And the proper spirit is to be interested in everything and to have one's mind firmly made up to *ignore small discomforts*. My woman who goes camping in Mexico will need, beside her short-skirted travelling suit, — which must be of very light weight, — several light shirt-waists. Let me advise her not to let her enthusiastic husband or brother (as the case may be) hurry on to camp without lingering in several of the interesting Mexican cities long enough to get a glimpse of the picturesque Mexican life. These cities are fascinatingly quaint and foreign, with their beautiful churches, their lovely little parks, *jardins* and *plazas*, as they are called, and the interesting markets, so characteristic of Mexico. In every city there is to be found a wonderful flower-market, where soft-voiced Mexican women sell you gorgeous bouquets of roses, great golden narcissus, and fragrant gardenias; and a Thieves' Market, which is a junk-shop on a gigantic scale; stolen and second-hand articles of every conceivable description are brought here to be sold, and here congregate the most picturesque and typical of the city's inhabitants.

For all this sight-seeing one needs a few light summer gowns. They cannot be bought ready-made in Mexico, and no one has time to parley with a dressmaker in this land of *mañana*. Neither can one swelter in the warm travelling suit which was a necessity on the steamer. "And," as says the immortal Duchess

in the "Alice in Wonderland" books, "the moral of this is," take all these needful things with you, for if you attempt to send home for them they may be delayed for weeks in the mails, and when they finally arrive, the duty on a garment sometimes exceeds its value.

These things, however, are for civilization, — not for the wilderness, — and before starting out for camp they should be left with some responsible person in the city which you make your headquarters. In our case this was Guadalajara.

Everything which we did not expect to use in camp was left in a large trunk, while we took with us on the trail only a steamer trunk and four waterproof clothing-bags — two of moderate size and two small. These bags save a surprising amount of weight, and pack readily on mule-back, as does also a steamer trunk.

When the last farewell to civilization is said, and the woman who goes camping sets forth on the trail to be a wilderness woman indeed, she will find that a very simple wardrobe will be all that is necessary. First and most important is a divided skirt of whipcord or corduroy. No one should attempt to ride side-saddle over these steep mountain trails; indeed the woman who does not intend to ride cross-saddle should never undertake a camping-trip in the wilds of Mexico. A short skirt of corduroy (khaki is also good) I found

most useful. Several thin shirt-waists, of a colour which does not soil easily, are indispensable. I prefer soft shades of gray and brown, as they are inconspicuous and harmonize with the rocks and trees. Brilliantine and alpaca make nice, cool, sensible waists. A pair of canvas hunting-leggings, like my husband's, were the joy and comfort of my life; for whatever Mexico may lack, it is not thorns! I wore ordinary medium-weight high shoes. Anything heavier will sorely try one's patience on a long, hot tramp in the *barrancas*. One must be sure to take plenty of shoes, as they are exorbitantly expensive in Mexico. A veil or two (or a net) to keep the hair from blowing in your face, when riding horseback, will be found of the greatest comfort. But I hope my camping woman will not mar her pleasure by wearing her veil *over* her face. A wild gallop over the plains on horseback loses much of its charm if there is anything between one's face and the pure invigorating mountain breezes. And after all, a little honest tan is a good thing!

But let us proceed to the rest of the outfit. The house over one's head is an important thing, so it is in order to discuss the matter of a tent. We have always found it a good plan to be generous in respect to its size — one ten by twelve feet being none too large for two persons. The cheapest kind of a tent will suffice; for during the winter season in Mexico, every day is like Indian summer — bright and cloud-

less. Hence umbrellas, rain-coats, and rubbers will all be very much *de trop*. We did not take tent-poles. A stout rope stretched between two trees answers every purpose, which reminds me that, like pins and strings, rope is a thing of which one can never have too much when camping.

A brown linen wall-pocket, with ten or twelve partitions, will almost take the place of a well-appointed bureau. It can be pinned to the wall of the tent and used to hold toilet articles, pins, collars, etc.

A box of Persian insect powder must not be omitted from your list of necessities. It may not be needed in camp, but if one has to spend the night in a native hut, or in a primitive Mexican hotel, which is sure to be the case, a "bug-gun" and insect powder will be of priceless value in proving an effectual cure for insomnia!

And now the question of beds. We used folding-cots (costing about two dollars each), and I strongly recommend them in preference to sleeping-bags, for a climate such as that of Mexico. Nothing is more comfortable than these cots, and by day they can be used as writing-desk, or sofa, while on the trail they are folded to very small compass. For warmth we took a soft cotton comforter for each person. On the trip down they were used to pack photographic plates and bottles. When we left they were bestowed upon a grateful Mexican. If one finds blankets necessary (as

will probably be the case, except in the *tierra caliente*, or hot lands), they can be purchased very cheaply in any Mexican store.

One must carry a small cooking outfit, and be sure that it includes an Abercrombie & Fitch open baker. This baker makes life worth living in camp, as it insures all kinds of delicious hot breads. A stove is always a failure, even though it be warranted to pack into a thimble. The cooking outfit will include steel knives, aluminum forks and spoons, plates and cups, and a small nest of cooking-utensils. A canvas water-pail is a valuable addition, and a can-opener is always a necessity. One must be prepared to find one's appetite trebled within the first week. We went about like the proverbial "roaring lion," seeking what we might devour; and we were indeed glad that we had laid in a good supply of canned and condensed things. Condensed soups are good, — especially bean, pea, and rice; and the addition of boiling water to "Maggi" bouillon capsules is all that is necessary to create a perfect consommé. But beware of dried vegetables.

The most delicious chocolate and coffee can be found everywhere in the country, but it will be wise to take some milk-powder, which is quite acceptable in these beverages, for in camp it is sometimes difficult to get fresh milk.

At Guadalajara we provided ourselves with flour, baking-powder, canned butter, Cream of Wheat, Ral-

ston, etc. The canned butter is extremely nice, and butter is a great luxury in Mexico. The Mexicans never eat it, and it is impossible to get, except at the American hotels in the large cities. As for meat, it is an easy matter to keep the table supplied with birds and venison.

It is the part of prudence to take a small medicine-case containing good general remedies, which should include absolute ammonia, to be used for scorpion or tarantula bites. The ammonia is used both externally and internally; for internal use take a few drops in water every half hour until relieved. This will probably not be needed, for the danger of scorpion and tarantula bites in Mexico is much exaggerated; however it is well to be on the safe side, remembering the old adage about the ounce of prevention.

Several candle lanterns (made by the Abercrombie & Fitch Company) and a supply of candles were added to our outfit.

We planned for observation and photography rather than collecting; so my husband took for general use only a small-bore (28 gauge) double-barrelled shot-gun and plenty of paper shells, which answered every requirement, both for providing the table with meat and for securing birds and other specimens for identification. We took a long-focus, four-by-five Premo camera and a kodak of the same size, and twenty-four dozen plates and films; besides ruby lantern and a

developing outfit, which, although heavy and bulky, gave results amply repaying all trouble. A trunk made a good developing-table; after the sun sank, the whole canyon became a dark-room; while our washing-tray was a cavity between two water-worn boulders, through which rushed the cold stream straight from the melting snows on the volcano.

To the camping woman should always be given this warning: See to it that the party is provided with a cook, that nothing may be expected of her in the way of cooking and dish-washing. Let her supervise the cooking — the menu will be vastly improved; and if she is gracious to the cook she may succeed in banishing the national garlic and *chili*. But have it distinctly understood that she is camping for *pleasure*, and that she does not expect to come home at night, tired after a long day's ride or tramp, with the prospect before her of wrestling with a smoky camp-fire and of washing dishes by the flickering light of a candle.

I hope every party may be as fortunate in its cook as we were in ours. He was cook, dish-washer, guide, and when occasion demanded more fluent Spanish than was at our command, he was interpreter. The pleasure of a trip to Mexico will be many times increased by a knowledge of the Spanish language, even as slight as that gained from Cortina's admirable little book "Spanish in Twenty Lessons;" indeed if you leave the beaten lines of travel and camp in the country,

this is an absolute necessity, unless you have an interpreter.

Both my husband and I had revolvers, and wore them. All the Mexicans in the wilder parts of the country wear revolvers, and it is but the part of safety to do likewise. The Mexicans are much surprised at seeing a *Señorita* ride cross-saddle and wear a revolver; so the camping woman must accustom herself to creating a sensation among these simple folk.

I shall never forget the impression I made in the little city of Colima. After riding many miles on the trail, we halted before the *Chino* Hotel, and very dusty and tired we were. Jumping off my horse, wearing of course my divided skirt and my revolver, I entered the *patio* of the hotel. A forlorn little Frenchman and his wife were dining in the *patio*, as were many Mexicans, and their astonishment at my appearance was ludicrous. A Mexican woman will often take a pipe from her mouth to express shock and surprise at a *Señorita* riding cross-saddle!

It was long before I could accustom myself not to start with surprise when I was invited to smoke. Even the clerks in the hotels will offer a woman a box of cigarettes as soon as she arrives, asking very politely "*Desea Vd. fumar?*" — Do you wish to smoke? This courtesy is to the Mexican as natural as for an American gentleman to offer a woman his chair.

There is much to amuse those of us who are blessed

with a sense of humour, and much to charm and interest every one in this strange land, which is yet so near a neighbour of ours.

As to horseback, my theory is that all one has to do is to get on and *ride*. I have little patience with spending months learning to ride. I had never ridden before, but I simply got on and rode off. Of course for the first few times one cannot ride long distances, but that soon comes with a little practice. The rule for a good dancer applies equally to a good rider — do not be rigid, let yourself go. In the case of riding let yourself go with your horse, and above all, do not be afraid. Pluck and a philosophic spirit will soon make a good rider, and a good camper, and a very happy person indeed.

We did not burden ourselves with carrying our own saddles. We found the Mexican saddles comfortable, provided you see to it that you get one the stirrups of which can be lengthened or shortened at will. We hired our animals and when we had made camp, sent them home with the guide, with orders to return every few days with our mail and with oranges, lemons, and other supplies.

Though I were to write a volume I could not adequately picture the great charm of our wild free life in camp! One lives so near the heart of Nature, and in this simple natural life learns many a great truth. The pure joy of life itself is ever present. Every possible

trouble or perplexity seems a thing of the past — almost left in another world. What matters anything in this great wild country — the day nor the hour nor the year are of any account. What a glorious thing is a cold plunge in early morning in the swift-flowing river near the tent, where the night before the deer drank, and along which all the furtive wild creatures of the night stealthily made their way in the moonlight. Here one feels how good a thing it is to be alive, to be hungry and to eat, to be weary and to sleep.

APPENDIX

APPENDIX

LIST OF BIRDS OBSERVED ON OUR MEXICAN TRIP

THE following list, omitting the birds which we observed in Cuba, includes all the more common species which would be observed by any one making such a trip to Mexico. I have followed the classification of the American Ornithologists' Union Check-List.

The delicate variations which at present are being recognized in the delineation of species and especially of subspecies of birds, although necessary in their function of aiding our knowledge of distribution and the effects of environment, yet render the exact identification of living birds an impossibility in some instances. But the residential and non-migratory habits of many Mexican species and their unusual fearlessness are very great helps to one who for the first time undertakes to observe the birds of this country. Whenever I have given brief descriptions, I have endeavored to use the characteristics which are instantly apparent in a quick glance with a glass or with the unaided eye. Where the description occurs in the body of the book, it is not repeated, but the reference is given.

The majority of these notes were made in the States of Jalisco and Colima in west-central Mexico. The dates and localities coincide approximately as follows: —

Guadalajara, — the first half of January and the first half of March.

Chapala and its marshes, — the latter half of March.

The higher or upper barrancas, near the eastern slope of the volcano of Colima, — the latter half of January.

The lower barrancas, near the southern slopes of the volcano, — the first half of February.

The hot lowlands west of the volcano, and the coastal region of the State of Colima, — the latter half of February.

WESTERN GREBE. *Æchmophorus occidentalis* (Lawr.). pp. 75, 110.

This master-diver is the largest of our Grebes, and is grayish above and silvery-white below. It has a long, pointed bill and a neck as long as the entire body. About a dozen were seen on Lake Chapala in March. The natives occasionally snare these birds (how, I could not learn), and offer their beautiful silky breasts for sale.

LEAST GREBE. *Colymbus dominicus brachypterus* Chapm. pp. 119, 123.

The smallest of North American Grebes. They were not uncommon on the large ponds of the marshes near Chapala. Their short wings and spattering attempts to rise in flight made them appear like the inexperienced young of some species of water bird. The Mexicans think that they are young ducks which, by some "seventh son of a seventh son" sort of magic, are different from their fellows and learned of the devil, being unharmable by their shot or bullets.

PIED-BILLED GREBE. *Podilymbus podiceps* (Linn.). p. 123.

The common "Dabchick" of our Northern mill-ponds winters on Lake Chapala and on many of the other lakes and ponds in the vicinity of Guadalajara.

LOON, or GREAT NORTHERN DIVER. *Gavia imber* (Gunn.). pp. 2, 110.

Three of these splendid birds showed themselves to us on the waters of Lake Chapala at the time of our visit, all in the dull plumage of winter, but with their weird cry as clear and thrilling as when uttered on the Bay of Fundy through the keen fog of early morning. We saw and heard these birds far out on the open Atlantic on our trip down.

HERRING GULL. *Larus argentatus* Brünn. p. 2.

Common in the harbour of Vera Cruz, and on the open ocean.

RING-BILLED GULL. *Larus delawarensis* Ord. p. 2.

Frequently seen on the ocean.

BONAPARTE GULL. *Larus philadelphia* (Ord).

Numerous on Lake Chapala in March, in company with other, unidentified gulls.

BLACK PETREL. *Oceanodroma melania* (Bonap.).

The small blackish petrels which we saw off shore at Manzanillo were doubtless of this species.

WILSON PETREL. *Oceanites oceanicus* (Kuhl). pp. 2, 19.

On Christmas Day several storm-blown individuals were seeking shelter behind low weeds on the beach, north of the city of Vera Cruz. They were frequently seen from the steamer on the open Atlantic.

RED-FOOTED BOOBY. *Sula nebouxii* Milne-Edwards. p. 335.

Many of these Boobies were fishing near shore in Manzanillo harbour, during our visit. They were very fearless and came close overhead, occasionally, as they flew, rubbing one of their red feet against the other.

BOOBY. *Sula sula* (Linn.). p. 12.

Numbers were seen between Progreso and Vera Cruz, near the Arcos Islands.

GANNET. *Sula bassana* (Linn.). p. 2.

Gannets were occasionally seen from the steamer's deck all the way from Cape Hatteras to Vera Cruz.

SNAKE-BIRD, or DARTER. *Anhinga anhinga* (Linn.).

One or two were seen on the marshes of Chapala. A Mexican told us that these birds had become much rarer than they formerly were.

MEXICAN CORMORANT. *Phalacrocorax mexicanus* (Brandt). pp. 18, 123, 190, 217.

Abundant on Lake Chapala and on all the rivers and streams down to the lowlands of Colima. Their food in the barran-

cas is partly vegetable, not exclusively fish. When on the wing they are not distinguishable from our northern Double-crested or from the Florida Cormorants.

American White Pelican. *Pelecanus erythrorhynchos* Gmel. p. 110.

A large number were reported as wintering on Lake Chapala, but only a few were seen.

Brown Pelican. *Pelecanus occidentalis* (Linn.). pp. 4, 18.

Three were seen near Vera Cruz on Christmas Day weathering a norther; and again three flew over the city at Easter.

California Brown Pelican. *Pelecanus californicus* Ridgw. p. 335.

Several were seen, flying or perching among the islets in the Pacific off Manzanillo. The living birds were not distinguishable from the eastern Pelicans.

Man-o'-War Bird. *Fregata aquila* Linn. pp. 5, 6.

One was seen flying before a storm at Vera Cruz.

Mallard. *Anas boschas* Linn. pp. 73, 118, 123, 190.

Very abundant on the marshes of Chapala and on the streams and ponds from the tableland to the low Pacific coastal region.

Gadwall. *Chaulelasmus streperus* (Linn.). p. 118.

Abundant on the marshes of Lake Chapala.

Baldpate, or American Widgeon. *Mareca americana* (Gmel.). p. 114.

Abundant on the Chapala marshes.

Green-winged Teal. *Nettion carolinensis* (Gmel.).

Very abundant on the marshes of Lake Chapala.

Blue-winged Teal. *Querquedula discors* (Linn.). pp. 73, 119, 123.

Cinnamon Teal. *Querquedula cyanoptera* (Vieill.). pp. 74, 119, 191.

These two species were abundant on the Lake Chapala marshes and along the rivers and small streams of the Western barrancas to sea-level. The Cinnamon Teal is a Western bird,

closely allied to our Blue-wing, but with the head, neck, breast, and sides bright cinnamon. These two little ducks divide the United States between them in the summer, but flock south together during cold weather.

Shoveller Duck. *Spatula clypeata* (Linn.). pp. 73, 119, 123.

Found on the Chapala marshes and small water pools on the tableland.

Pintail Duck. *Dafila acuta* (Linn.). pp. 73, 114, 119.

Found in large numbers on Lake Chapala. The migration northward had begun in February.

Canvas-back Duck. *Aythya vallisneria* (Wils.). p. 119.

Four were observed on the Chapala marshes.

Lesser Scaup Duck. *Aythya affinis* (Eyt.). pp. 4, 113, 119, 123.

Common at Chapala and on small ponds on the tableland. All that were examined in the hand were *affinis*.

Snow Goose. *Chen hyperborea* (Pall.). pp. 120, 121.

White-fronted Goose. *Anser albifrons* (Gmel.). pp. 119, 120.

We saw large flocks of these two species of Geese on the Chapala marshes. About the middle of March they were starting northward in great numbers.

Roseate Spoonbill. *Ajaia ajaia* (Linn.).

Two individuals of this beautiful species were seen in the hot lowlands of the Pacific coast.

White Ibis. *Guara alba* (Linn.). p. 316.

A flock of eleven birds haunted a stream near our camp in the lowlands of Colima.

White-faced Glossy Ibis. *Plegadis guarauna* (Linn.). pp. 75, 81, 82, 119, 123.

We saw many flocks of fifty or more of these birds on the Chapala marshes; others near Guadalajara and on the wayside pools from La Barca to Tuxpan.

Wood Ibis. *Tantalus loculator* Linn. pp. 5, 332.

These birds, ugly of mien, but magnificent in flight, were

abundant in the lowlands of Colima and in the dreaded lagoon near Manzanillo.

GREAT BLUE HERON. *Ardea herodias* Linn. pp. 78, 86, 118, 123, 332.

This bird was seen on all lakes, ponds, and streams in Jalisco and Colima; and occasionally even in the deserts.

AMERICAN EGRET. *Herodias egretta* (Gmel.). pp. 78, 79, 110, 123.

Quite common at Chapala and at Agua Azul near Guadalajara.

REDDISH EGRET. *Dichromanassa rufescens* (Gmel.). p. 118.

Several were observed near Lake Chapala.

LOUISIANA HERON. *Hydranassa tricolor ruficollis* (Gosse).

Abundant at Chapala.

LITTLE BLUE HERON. *Florida cœrulea* (Linn.). pp. 302, 315.

Several in the white juvenile plumage were seen in the lowlands of Colima.

LITTLE GREEN HERON. *Butorides virescens* (Linn.). pp. 78, 123.

Abundant on all ponds and streams in Jalisco and Colima, from tableland to coast. Whether they were of the subspecific form *anthonyi*, I am unable to state.

BLACK-CROWNED NIGHT HERON. *Nycticorax nycticorax nævius* (Bodd.).

Two individuals were noted in a barranca near the volcano of Colima. One was shot, while I was catering for our larder, by a stray pellet from a charge fired at a flock of doves.

BOAT-BILLED HERON. *Canchroma zeledoni* Ridgw. pp. 325, 326.

Not uncommon in the swamps and along the streams of the hot lands of Colima.

SANDHILL CRANE. *Grus mexicana* (Müll.).

Several were seen from the train near Tuxpan.

PURPLE GALLINULE. *Ionornis martinica* (Linn.). p. 123.

AMERICAN COOT. *Fulica americana* Gmel. pp. 73, 74, 113, 118, 123.

Both these birds were quite common in the vicinity of streams and ponds near Guadalajara.

Black-necked Stilt. *Himantopus mexicanus* (Müll.). pp. 77, 118, 123.

Also common on streams and ponds near Guadalajara.

Wilson Snipe. *Gallinago delicata* (Ord.). pp. 19, 103.

Several were seen near Guadalajara and on the beach near Vera Cruz.

Greater Yellow-legs. *Totanus melanoleucus* (Gmel.) p. 118.

Yellow-legs. *Totanus flavipes* (Gmel.). p. 118.

Both birds abundant on the ponds and lakes of the tableland.

Solitary Sandpiper. *Helodromas solitarius* (Wils.). pp. 134, 135, 136.

Abundant on the tableland and in the barrancas.

Spotted Sandpiper. *Actitis macularia* (Linn.).

Common on the ponds about Guadalajara.

Long-billed Curlew. *Numenius longirostris* Wils. p. 118.

Quite common on the marshes about Chapala.

Killdeer. *Oxyechus vociferus* (Linn.). pp. 19, 117, 134.

Common everywhere in the barrancas and in the lowlands of Colima. Four were seen on the beach at Vera Cruz.

Mexican Jacana. *Jacana spinosa* (Linn.). pp. 79, 80, 123.

Fairly common on ponds about Guadalajara.

Grayson Bob-White. *Colinus graysoni* (Lawr.). p. 252.

Heard among the pines on the volcano of Colima.

Scaled Partridge. *Callipepla squamata* (Vig.). p. 268.

Common in the lowlands of Colima.

Wagler Chachalaca. *Ortalis wagleri* (Gray). pp. 324, 328.

Several seen in the lowlands of Colima.

Band-tailed Pigeon. *Columba fasciata* Say. p. 292.

Abundant in the lowlands of Colima.

Mourning Dove. *Zenaidura macroura* (Linn.). pp. 104, 185, 218.

Abundant everywhere.

White-fronted Dove. *Leptotila fulviventris brachyptera* (Salvadore). pp. 218, 250.

Abundant in the barrancas.

White-winged Dove. *Melopelia leucoptera* (Linn.). pp. 292, 302.

Very abundant in the hot lands of Colima.

Mexican Ground Dove. *Columbigallina passerina pallescens* (Baird). p. 185.

Inca Dove. *Scardafella inca* (Less.). pp. 61, 185.

These last two doves were very common throughout Jalisco and Colima.

Turkey Vulture. *Cathartes aura* (Linn.). pp. 61, 88, 89, 214, 215.

Black Vulture. *Catharista urubu* (Vieill.). pp. 25, 88, 89, 214, 215.

Both kinds of vultures were everywhere very abundant.

Marsh Hawk. *Circus hudsonius* (Linn.). pp. 21, 45.

Very abundant on the tableland.

Western Red-tailed Hawk. *Buteo borealis calurus* (Cass.). pp. 76, 138.

Not uncommon.

Sennett White-tailed Hawk. *Buteo albicaudatus sennetti* Allen. p. 117.

Two individuals were observed, one near Chapala and one near the village of Tuxpan.

Mexican Black Hawk. *Urubitinga anthracina* (Licht.). pp. 135, 136, 137, 139, 250, 316.

Common in the barrancas and in the low country.

Mexican Goshawk. *Asturina plagiata* Schlegel. pp. 137, 139, 140.

Laughing Falcon. *Herpetotheres cachinnans* Vieill. pp. 320, 324, 328.

Both of these birds were not uncommon in the barrancas and lowlands of Colima.

Desert Sparrow Hawk. *Falco sparverius phalœna* (Lesson). pp. 21, 32, 42, 45, 51, 57, 94.

Very abundant everywhere.

AUDUBON CARACARA. *Polyborus cheriway* (Jacq.). pp. 117, 214, 250, 257, 292, 293, 294.

Abundant everywhere.

AMERICAN BARN OWL. *Strix pratincola* Bonap. p. 278.

Observed both near Guadalajara and in the lowlands of Colima.

BURROWING OWL. *Speotyto cunicularia hypogæa* (Bonap.). pp. 101, 102.

Common about Guadalajara.

(Several other species of Owls were seen but could not be identified. One very probably was *Ciccaba squamulata.*)

THICK-BILLED PARROT. *Rhyncopsitta pachyrhyncha* (Swains.). p. 252.

Common in the barrancas on the slopes of the volcano of Colima.

FINSCH AMAZON PARROT. *Amazona finschi* (Scl.). pp. 182, 183.

Common in the barrancas and in the low regions about Colima.

RED-AND-BLUE-HEADED PARRAKEET. *Conurus canicularis* (Linn.). pp. 178, 181.

Numerous in the barrancas and in the lowlands.

MILITARY MACAW. *Ara militaris* (Linn.). pp. 173, 174, 249, 263, 283.

Common in the barrancas and in the lowlands.

GROOVE-BILLED ANI. *Crotophaga sulcirostris* Swains. p. 322.

Abundant in the lowlands of Colima. Their favourite food seemed to be hemiptera, daddy-long-legs, and small berries.

ROADRUNNER. *Geococcyx californianus* (Less.). pp. 177, 178, 232.

Common in all the desert regions.

RUFOUS CUCKOO. *Piaya mexicana* (Swains.). pp. 176, 177, 178.

Rare in the barrancas. Abundant in the tropical lowlands.

COPPERY-TAILED TROGON. *Trogon ambiguus* Gould. pp. 184, 249, 250.

Rather common in the higher barrancas of Colima.

YELLOW-BELLIED TROGON. *Trogon citreolus* Gould. pp. 304, 305.

Common in the tropical parts of Colima.

MEXICAN MOTMOT. *Momotus mexicanus* Swains. pp. 198–206, 305.

Common in the barrancas and in the lowlands of Colima.

BELTED KINGFISHER. *Ceryle alcyon* (Linn.). pp. 72, 317.

Common near Guadalajara and occasionally seen in the tropics of Colima.

RUFOUS-BELLIED KINGFISHER. *Ceryle torquata* (Linn.). p. 318.

Not uncommon along the streams of the lowlands of Colima.

TEXAS, or LITTLE GREEN KINGFISHER. *Ceryle americana septentrionalis* Sharpe. pp. 142–146, 317, 318.

Rather rare about Guadalajara. Common in the barrancas in the hot country.

GUATEMALAN WOODPECKER. *Campephilus guatemalensis* (Hartl.). p. 288.

Six observed in the low country of Colima.

SINALOA LADDER-BACKED WOODPECKER. *Dryobates scalaris sinaloensis* Ridgw. p. 249.

Rarely seen in the lower barrancas about the volcano.

MEXICAN PILEATED WOODPECKER. *Ceophlœus scapularis* (Vig.). p. 208.

Not uncommon in the barrancas.

ELEGANT WOODPECKER. *Melanerpes elegans* (Swains.). pp. 146, 147, 148.

Common among the barrancas.

GILA WOODPECKER. *Centurus uropygialis* Baird.

A pair seen near the volcano.

MEXICAN GOATSUCKER. *Nyctibius jamaicensis mexicanus* Nelson. pp. 197, 198.

Three flew past me near a stream in one of the lower barrancas of Colima.

PARAUQUE. *Nyctidromus albicollis* (Gmel.). p. 303.

Very abundant in the lowlands of Colima.

MEXICAN WHIP-POOR-WILL. *Antrostomus macromystox* (Wagl.). p. 220.

Several seen in the barrancas.

Ridgway Whip-poor-will. *Antrostomus ridgwayi* Nelson. pp. 218, 219.

Two seen in a barranca near the volcano.

Nighthawk. *Chordeiles* sp.?

Not uncommon in the lowlands of Colima.

Costa Hummingbird. *Calypte costæ* (Bourc.). p. 56.

Many were seen in the ditches about Guadalajara, January 1st to 8th, but not one observed after that date.

Blue-crowned Hummingbird. *Cyanomyia verticalis* (Licht.). p. 96.

Very abundant. Associated with the Broad-billed Hummingbird.

Rufous Hummingbird. *Selasphorus rufus* (Gmel.). p. 56.

Common about Guadalajara.

Broad-billed Hummingbird. *Iache latirostris* (Swains.). p. 96.

Common in the barrancas near Guadalajara.

Fork-tailed, or Golden-backed Hummingbird. *Chlorostilbon auriceps* (Gould). pp. 150, 151.

Very abundant in the lower barrancas about the volcano of Colima.

Xantus Becard. *Platypsaris albiventris* (Lawr.). p. 331.

Several seen near our camp in the lowlands of Colima.

Gray-headed Tityra. *Tityra personata griseiceps* Ridgw. p. 231.

Fairly common in the lower arroyos of Colima. Their favourite food was a berry with triangular pits, together with large grasshoppers.

Swainson Wood-hewer. *Dendrornis flavigaster* (Swains.). pp. 323, 324.

Several individuals observed in the coastal region of Colima.

Cassin Kingbird. *Tyrannus vociferans* Swains. p. 189.

This yellow-bellied Kingbird was common about the streams in the barrancas.

PITANGUA TYRANT. *Megarhynchus pitangua* (Linn.). pp. 189, 190, 249.

This giant Flycatcher was common everywhere from four thousand feet elevation to sea-level in Colima.

DERBY FLYCATCHER. *Pitangus derbianus* (Kaup). pp. 155, 156, 163, 189.

Abundant everywhere, especially along the streams.

GIRAUD FLYCATCHER. *Myiozetetes similis superciliosus* (Bonap.). p. 189.

Rather rare in the upper Colima barrancas. Smaller than the Cassin Kingbird and very striking in its colouration, — greenish above, bright yellow below, with a very distinct white throat and line encircling the crown, which latter is fiery red.

ASH-THROATED FLYCATCHER. *Myiarchus cinerascens* (Lawr.). pp. 76, 187.

Very abundant, especially on the tableland deserts, among the cactus.

QUERULOUS FLYCATCHER. *Myiarchus lawrenceii querulus* Nelson. p. 187.

Common about camp in the lower arroyos of the volcano. A small, long-billed bird dressed in quiet hues.

BLACK PHŒBE. *Sayornis nigricans* (Swains.). pp. 186, 192, 209, 211.

Abundant everywhere along streams from the tableland to the Pacific.

OLIVE-SIDED FLYCATCHER. *Nuttallornis borealis* (Swains.).

Two of these old friends of the North came under our observation at Coquimatlan in the lowlands of Colima.

SWAINSON FLYCATCHER. *Horizopus musicus* (Swains.). p. 187.

A phœbe-like species common about our camps in the upper and lower barrancas of the volcano.

LEAST FLYCATCHER. *Empidonax minimus* Baird. p. 188.

A small, loose flock observed several times near camp in a

lower barranca; the only flycatchers which seemed to remain together in any association which could be called a flock.

VERMILION FLYCATCHER. *Pyrocephalus rubineus mexicanus* (Scl.). pp. 70, 71, 91, 92, 93, 187.

Very abundant everywhere on the tableland all across the continent; less so at lower elevations in Colima.

BEARDLESS FLYCATCHER. *Ornithion imberbe* (Scl.). p. 190.

Several seen in the lower barrancas of Colima feeding on tiny berries. These birds were very wary.

LONG-TAILED BLUE JAY, or MAGPIE JAY. *Calocitta colliei* (Vig.). pp. 174, 175, 176, 178, 320.

Abundant from Tuxpan (about four thousand feet) to the sea-level in Colima.

AMERICAN RAVEN. *Corvus corax sinuatus* (Wagl.). pp. 75, 86.

Rarely seen about Guadalajara and in the barrancas of the volcano.

WHITE-NECKED RAVEN. *Corvus cryptoleucus* Couch. p. 104.

Very abundant on the deserts of the tableland.

MEXICAN CROW. *Corvus mexicanus* Gmel.

Several seen in Vera Cruz.

COWBIRD. *Molothrus* sp.? pp. 32, 117.

Unidentified birds were in the same flocks with the Red-eyes.

RED-EYED COWBIRD. *Callothrus robustus* (Cab.). p. 117.

Great flocks of these birds were common at Chapala and along the line of the Mexican Central Railroad in western Mexico.

YELLOW-HEADED BLACKBIRD. *Xanthocephalus xanthocephalus* (Bonap.). pp. 64, 65, 115, 116.

Very abundant about Guadalajara and Chapala.

BICOLOURED BLACKBIRD. *Agelaius gubernator californicus* Nelson. pp. 115, 116.

Immense flocks were feeding in the Chapala marshes.

MEXICAN MEADOWLARK. *Sturnella magna mexicana* (Scl.). pp. 114, 115, 116, 349.

Common at Chapala and in the fields and along the trails in the lowlands of Colima.

MEXICAN CACIQUE. *Cassiculus melanicterus* (Bonap.). pp. 284, 285.

Very abundant in the lowlands of Colima. Rare in the upper barrancas around the volcanos. A large unidentified species of Oriole or Cacique was seen twice in the low country.

WAGLER ORIOLE. *Icterus wagleri* Scl. p. 149.

Abundant in the barrancas about Guadalajara and from Tuxpan to the Pacific.

ARIZONA HOODED ORIOLE. *Icterus cucullatus nelsoni* Ridg.

One individual seen at Tuxpan.

BULLOCK ORIOLE. *Icterus bullocki* (Swains.).

Four seen near Guadalajara.

BREWER BLACKBIRD. *Euphagus cyanocephalus* (Wagl.). p. 61.

This beautiful blue-black bird was abundant in the cities, associating in flocks with the Boat-tails.

GREAT-TAILED, or BOAT-TAILED GRACKLE. *Megaquiscalus major* subsp.? pp. 61, 72.

This bird, in one of its subspecific forms, was abundant in all the western towns and cities which we visited.

CUERNAVACA HOUSE FINCH. *Carpodacus mexicanus rhodocolpus* (Caban.). pp. 46, 62.

Very abundant in and about Guadalajara.

ARKANSAS GOLDFINCH. *Astragalinus psaltria* (Say).

A small flock were observed in an upper barranca of Colima, feeding on the eggs of insects.

MEXICAN GOLDFINCH. *Astragalinus psaltria mexicanus* (Swains.). p. 99.

Several seen near Guadalajara.

FORRER SISKIN. *Spinus notatus forreri* (Salv. & Godm.). p. 252.

Rarely seen among the pines on the upper slopes of the

volcano. A beautifully marked bird, — green, yellow, and black.

WESTERN GRASSHOPPER SPARROW. *Coturniculus savannarum bimaculatus* (Swains.). p. 51.

Rarely seen about Guadalajara.

WESTERN LARK SPARROW. *Chondestes grammacus strigatus* (Swains.). pp. 45, 55.

Very abundant about Guadalajara.

CLAY-COLOURED SPARROW. *Spizella pallida* (Swains.). pp. 45, 51.

Very common about Guadalajara.

BREWER SPARROW. *Spizella breweri* Cass. p. 94.

A flock of these birds were seen near Guadalajara. One, with a diseased foot, was found dead.

COLIMA GROUND SPARROW. *Aimophila acuminata* Salv. & Godm. p. 348.

A very handsome black-and-white-headed sparrow; extremely fearless and seen in great flocks along the old Spanish road from the city of Colima to Tonila.

LINCOLN SPARROW. *Melospiza lincolnii* (Aud.). p. 102.

One found entangled in a thorn-bush near Guadalajara. This was the only specimen seen on our trip.

XANTUS GROUND SPARROW. *Melozone rubricatum xantusii* (Lawr.). p. 249.

Often seen in the bottoms of the lower barrancas, where a single individual would make a great racket, scratching like a Towhee among the dead leaves. Its bright rufous cap and conspicuous white eye-ring made it easy to identify.

SINALOA SPARROW. *Arremonops superciliosus sinaloæ* Nelson. p. 308.

Not uncommon in the lowlands of Colima. Not distinguishable in life from the Texas sparrow of our Southwestern States.

BROWN TOWHEE. *Pipilo fuscus* Swains. pp. 52, 113.

Very common in and about Guadalajara and Tuxpan.

GREEN-TAILED TOWHEE. *Oreospiza chlorura* (Aud.). p. 52.

Common about Guadalajara.

ARIZONA PYRRHULOXIA. *Pyrrhuloxia sinuata* Bonap. p. 47.

A pair of these beautiful birds were seen in a Guadalajara ditch.

BLACK-HEADED GROSBEAK. *Zamelodia melanocephala* (Swains.). pp. 308, 349.

Common along the Colima trail from that city to the volcano.

The most abundant of all the *Fringillidæ* in the lowlands of the coastal region of Colima.

WESTERN BLUE GROSBEAK. *Guiraca cærulea lazula* (Lesson). p. 350.

Fairly common in all the barrancas of the volcano of Colima. The males were in beautiful plumage early in February.

VARIED BUNTING. *Cyanospiza versicolor* (Bonap.). pp. 195, 350.

Common only along the edges of the barranca streams and on the Colima trail, in company with flocks of Black-headed Grosbeaks.

PAINTED BUNTING, or NONPAREIL. *Cyanospiza ciris* (Linn.). p. 349.

One male flew across the Colima trail before us.

LECLANCHER, or RAINBOW BUNTING. *Cyanospiza leclancheri* (Lafres.). p. 321.

Common in the Colima lowlands. Rare in the lower barrancas of the volcano.

TURQUOISE-FRONTED BUNTING. *Cyanocompsa parellina indigotica* Ridgw. p. 308.

Not uncommonly found with the Leclancher. The dull brown females were especially abundant.

GODMAN EUPHONIA. *Euphonia godmani* Brewst. p. 194.

Several small flocks observed in a grove of wild fig-trees near a stream in a lower reach of one of the barrancas.

LOUISIANA TANAGER. *Piranga ludoviciana* (Wils.). p. 149.

Two or three seen in the higher barrancas of Colima.

HEPATIC TANAGER. *Piranga hepatica* Swains. p. 308.

Not uncommon near water in the lowlands of Colima.

SUMMER TANAGER. *Piranga rubra* (Linn.). p. 208.

Two pairs frequented our camp in a lower barranca of the volcano.

BARN SWALLOW. *Hirundo erythrogastra* Bodd. pp. 107, 108.

Several seen in the village of La Barca, where they were beginning to nest late in March.

VIOLET-GREEN SWALLOW. *Tachycineta thalassina* (Swains.). pp. 107, 191.

Very abundant along the upper barranca streams.

WHITE-RUMPED SHRIKE. *Lanius ludovicianus excubitorides* (Swains.). pp. 32, 51, 94, 130.

Common everywhere on the tableland.

CASSIN VIREO. *Vireo solitarius cassinii* (Xantus).

One bird shot in the Barranca Atenquiqui.

BLACK-CAPPED VIREO. *Vireo atricapillus* Woodh. p. 300.

Abundant near camp in the lowlands. These birds were dapper little insect hunters, green-backed, black-capped, and white-breasted.

YELLOW-BELLIED VIREO. *Vireo hypochryseus* Scl. p. 154.

Fairly common in the upper barrancas.

BLACK AND WHITE WARBLER. *Mniotilta varia* (Linn.). p. 307.

One seen in a thick jungle in the Colima coast region.

VIRGINIA WARBLER. *Helminthophila virginiæ* (Baird). p. 155.

Very common about our camp in an upper barranca.

NASHVILLE WARBLER. *Helminthophila rubricapilla* (Wils.). p. 300.

At times there were twenty and thirty in sight at once near our camp in the Colima lowlands.

LUTESCENT WARBLER. *Helminthophila celata lutescens* (Ridgw.). p. 52.

Quite common in the Guadalajara ditches.

YELLOW WARBLER. *Dendroica æstiva* (Gmel.).

Fairly common during two days of our stay in the lowlands of Colima.

AUDUBON WARBLER. *Dendroica auduboni* (Towns.). pp. 60, 61, 154, 252.

Abundant in every village and city which we visited and among the pines on the volcano of Colima.

BLACK-THROATED GRAY WARBLER. *Dendroica nigrescens.* (Towns.). p. 204.

One seen in a wild portion of a lower barranca of Colima.

TOWNSEND WARBLER. *Dendroica townsendi* (Towns.). p. 300.

Not uncommon in the lowlands of Colima.

LOUISIANA WATER-THRUSH. *Seiurus motacilla* (Vieill.). p. 315.

Rare in the upper barranca streams; common near water in the Colima lowlands.

DUBUS RED-BREASTED CHAT. *Granatellus venustus* Bonap. p. 290.

Fairly common in the hot lands.

PILEOLATED WARBLER. *Wilsonia pusilla pileolata* (Pall.). pp. 100, 204, 249.

Common at every elevation in all kinds of country, — desert, jungle, and canyon.

PAINTED REDSTART. *Setophaga picta* Swains. pp. 246, 249, 308.

Abundant and conspicuous in the lower barrancas, at an elevation of two thousand feet and lower.

DUGÈS WARBLER. *Basileuterus rufifrons dugesi* Ridgw. p. 195.

Very rare and local in an arroyo near the Colima volcano.

WESTERN MOCKINGBIRD. *Mimus polyglottos leucopterus* (Vigors). pp. 55, 94, 130, 239.

Abundant in the chaparral about Guadalajara and in the upper barrancas.

CURVE-BILLED THRASHER. *Toxostoma curvirostre* (Swains.). pp. 93, 113, 129.

Common in the "cactus country."

Mexican Cactus Wren. *Heleodytes brunneicapillus obscurus* Nelson. p. 95.

Common in the mesquite about Guadalajara. One was shot with large swellings on its feet and legs; perhaps from injuries received from spines and thorns.

Oak Forest Wren. *Heleodytes gularis* (Scl.). p. 307.

Found in colonies of about six, which kept together in some favourite portion of the jungle near running water in the tropical lowlands.

Mexican Canyon Wren. *Catherpes mexicanus* (Swains.). pp. 62, 140, 142, 149, 161, 217, 257, 263.

Common in Guadalajara and in the upper barrancas.

Sinaloa Wren. *Thryophilus sinaloa* Baird. p. 101.

Occasional in the barrancas near Guadalajara. Their last year's nests were very common. Several unidentified house-wren-like species were observed in the barrancas.

Lloyd Bush-Tit. *Psaltriparus melanotis lloydi* (Sennett). p. 94.

Several were seen in the mesquite near Guadalajara. Saw one killed and left by a shrike.

Western Gnatcatcher. *Polioptila cærulea obscura* Ridgw. pp. 100, 101, 154.

Abundant everywhere.

Mazatlan Solitaire. *Myadestes obscurus occidentalis* Stejn. pp. 247, 248, 250.

Rather rare in one of the lower barrancas of the volcano.

Jalisco Catharus. *Catharus melpomene clarus* Jouy.

Several seen in a small grove of trees in a lower reach of a barranca bordering the hot lands of Colima.

Western Robin. *Merula migratoria propinqua* Ridgw. p. 194.

Several were seen in the barrancas and near small streams in the lowlands.

Red-backed Robin, or Yellow-billed Robin. *Merula flavirostris* Swains. p. 306.

Common in the lowlands.

GRAY-BREASTED ROBIN. *Merula tristis* Swains. p. 306.

Rather rare, associated with the Red-backed species.

BLUEBIRD. *Sialia sialis* (Linn.). p. 252.

Common among the pines on the upper slopes of the volcano.

LIST OF MAMMALS

MEXICAN OPOSSUM. *Didelphis mesamericana* Oken. pp. 276, 277, 282, 295.

Not uncommon in the barrancas and abundant in the Colima lowlands.

NINE-BANDED ARMADILLO. *Tatu novemcinctum* (Linn.). pp. 225, 236, 237, 258, 276, 282.

Abundant everywhere from the tableland to the Pacific.

COLLARED PECCARY. *Tayassu angulatum humerale* Merriam. pp. 328, 330.

Several individuals seen in the lowlands. The natives say that they are harmless.

MEXICAN DEER. *Odocoileus* sp.? pp. 207, 220, 258, 360.

Common, especially in the upper barrancas. I captured alive, in Jalisco, and brought back to New York, a young buck, which is without doubt the Nelson Deer, *Odocoileus nelsoni* (Merr.).

BLACK-FACED BROCKET. *Mazama sartorii* (Saussure). pp. 328–330.

I saw a pair of the horns of this small deer in the possession of an Indian, but we could not induce him to part with them. He told me that the animal had been shot a few miles to the southward.

TAPIR. *Tapirella bairdii* (Gill).

Said to be not uncommon a few miles west from our camp in the hot country.

MEXICAN GRAY SQUIRREL. *Sciurus poliopus cervicalis* (Allen). p. 288.

Common in burrows in the coastal region of Colima. A large, very dark, or black squirrel was twice seen in a lower barranca.

FLYING-SQUIRRELS (or a species of mouse with great leaping power). pp. 224, 256.

Occasionally seen at night in the barrancas. Never identified.

RED-BELLIED GROUND SQUIRREL. *Citellus annulatus* (Aud. & Bach.). pp. 70, 288, 289, 292.

Very abundant, living in the crevices of cliffs about Guadalajara and in the low country of Colima.

MEXICAN SPERMOPHILE. *Citellus mexicanus* (Erxleben). pp. 59, 288.

Common in burrows in the Guadalajara ditches.

JALISCO POUCHED RAT. *Liomys* sp.? pp. 58, 59.

Very abundant associated with the above. At least five species of wild mice were common near all our camps. Our skins and skulls were lost by an accident.

JAGUAR. *Felis hernandesii* (Gray). pp. 257, 330.

Occasionally heard roaring in the lower barrancas. Their skins were now and then brought into the villages in the low regions of Colima. In the isolated *haciendas* they were said to kill the cattle.

TIGER-CAT, or OCELOT. *Felis pardalis* Linn. p. 330.

We heard frequent reports of this animal in the lower parts of Colima, and saw its skins.

YAGUARONDI CAT. *Felis yagouaroundi tolteca* Thomas. pp. 326, 327, 330.

I saw one and found the skull of another. The Mexicans knew little about it. They called it *Leoncillo*.

GUATEMALAN GRAY FOX. *Urocyon guatemalæ* Miller. pp. 225–228.

Common in all the barrancas and at sea-level in Colima.

COYOTE. *Canis vigilis* Merriam. pp. 274, 276.

Common in the open lowlands. Said to feed upon armadillos.

GREAT-TAILED SKUNK. *Mephitis macroura* Licht. pp. 279, 280, 282, 283, 294, 295.

Common in the barrancas and in the low country.

LESSER SKUNK. *Spilogale* sp.?

A small species of skunk was occasionally seen near the volcano.

WHITE-NOSED COATI MONDI. *Nasua narica molaris* Merriam. pp. 280–282.

All the Mexicans believe that there are two species of Coati or *tajon*, one of which hunts in bands, while the other, a larger kind, is always found alone. One of the latter kind which we secured proved to be an old scarred male, so probably this *tajon major* is only an occasional ostracized individual.

MEXICAN RACCOON. *Procyon lotor hernandezii* (Wagl.). pp. 162–164, 209, 220, 223, 281, 282.

The individuals which we saw and shot were all of large size. Very abundant everywhere except on the tableland.

RING-TAILED CAT. *Bassariscus astutus* (Licht.). pp. 220–223, 281, 282.

Plentiful both in the barrancas and lowlands.

BLACK BEAR. *Ursus americanus* Pall. p. 328.

A report came to us again and again of three bears which had been shot in Tepic and in the northern mountains of Jalisco. I obtained a good-sized tooth from an Indian hunter. This bear is called *Oso* by the Mexicans.

VAMPIRE. *Desmodus rotundus* (E. Geof.). pp. 270, 276.

Rather common in the Colima lowlands. One, which found its way one night into the house with us, tried to escape but made no attempt to disturb us. Near camp I found one dead, hanging in a dense thicket close to a hollow tree. It had evidently been dead some days.

SMALL BAT. Sp.? pp. 217, 218, 360.

Very abundant near our camp in the lowlands.

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